

Cultural Life In The Soviet Union

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CHAPTER I.

INTRODUCTION

EDUCATION has been a matter of great concern to the Soviet Union from its very foundation.

Lenin stated: "We need an enormous cultural development," and that it was necessary to master "the knowledge without which the modern conception of an educated man is impossible."

Article 121 of the Constitution reads

"All citizens have the right to education"

The introduction of *universal compulsory education* for children is one of the main indications of a country's cultural standard.

About *four-fifths* of all children in Russia were deprived before 1917 of the possibility of getting education

With the provision of the necessary conditions, such as school buildings and trained teachers, it became possible to introduce universal compulsory education in the Soviet Union. At the XVI Congress of the All-Union Communist Party in 1930 Stalin said

"The main thing now is to introduce compulsory elementary education I say 'main' because such a change would mean a decisive step in the cultural revolution. And it has long been high time to begin this, because we have to-day all that is necessary to organise general elementary education in the vast majority of districts of the U S S R "

The same year the Soviet Government decreed the introduction of universal compulsory primary education throughout the country. A gigantic process of school building was begun In the far north of the Soviet Union,

where peoples did not even have alphabets of their own prior to the Soviet regime, in the steppes of Central Asia, in the remote mountain villages of the Caucasus, schools sprang up. The number of schools built during the 28 years of Soviet rule by far exceeds the number built during 200 years of tsarism. Here are some figures.

In 1913 there were only 12 primary schools and one secondary school with a few hundred pupils in the Kabardino-Balkarian Autonomous Soviet Socialist Republic, whereas in 1940 there were 94 primary, 61 secondary, and 92 seven-year schools incomplete (from 8 to 15 years of age) totalling 74,648 pupils.

Similarly striking changes have occurred in other Republics of the Soviet Union.

In 1914 there were 34,000 pupils in the Armenian Soviet Socialist Republic, in 1939 there were 320,000, in 1914 there were 6,800 pupils in the Turkmenian Soviet Socialist Republic, in 1939 there were 223,000, in 1914 there were 17,000 pupils in the Uzbek Soviet Socialist Republic and in 1939—1,106,000 pupils, etc.

In 1938 the Soviet Government decided to introduce universal seven years' education in towns with an extension on local initiative to from 8 to 10 years, i.e., from 8 to 18, as a part of the plan for the universal compulsory education of children.

Special education institutions to train skilled workers, technicians and engineers for industry, specialised agricultural workers, nurses and doctors, have been opened alongside the general schools. In 1914 there were 35,800 pupils in vocational schools, in 1940—802,300; there were in 1914 24,700 students in universities and institutes, and 564,600 in 1940-41.

The Soviet Union inherited from tsarism an extremely large number of illiterate adults who had first to be given

primary education Special schools for adults, of a temporary character, and evening classes were created for that purpose in addition to facilities for individual education

As a result of these measures illiteracy was almost completely wiped out in the Soviet Union.

Many of the nationalities which inhabited Russia did not even have alphabets of their own before the advent of the Soviet State The Soviet Government has carried out educational work of great magnitude, and has accomplished a "cultural revolution" in the National Republics. New schools, institutes, clubs and libraries have been opened in which children and adults are able to study freely in their own languages Striking changes which have occurred in the cultural life of the National Republics can be seen from the following table.

Literacy in Different Federal Republics

	1926	1939
	Per cent.	Per cent.
R S.F.S R	55.0	81.9
Ukrainian S S R	57.5	85.3
Azerbaidjan S.S R	25.2	75.3
Turkmen S.S.R.	12.5	67.2
Uzbek S S R	10.6	67.8
Tadjik S S R	3.7	71.7

The educational system of the Soviet Union serves all sections of the population.

The declaration of October 16, 1918 on unified schools for the Soviet working masses laid down the following main principles as the basis for the educational system.

1. *State Schools* All types of education institutions are financed from the State budget. The State deter-

mines the tasks and the character of school work (syllabuses, curricula, and other measures) The management, leadership and control of education are vested in the hands of the educational authorities.

2 *Secular Education* Separation of the school from the church. The People's Commissariat for education in its decision of February 18, 1918, explained "Considering that religion is a matter of conscience for every individual, the State in religious matters remains neutral, i.e., it does not back any particular religion, does not grant any rights or privileges, nor does it support any particular religion materially or morally It follows from this that the State cannot undertake the task of religious education of children "

3 *Education for All* All citizens without regard to their religion or social standing, sex or nationality, have access to *general and vocational education*

This access is guaranteed by the following measures.

(a) By education free of charge Education up to the eighth year of the secondary school is free of charge. From the eighth to the tenth year inclusive a pupil has to pay a small fee of 50 roubles a year which amounts to 14 per cent. of the annual average income (data of 1938) and thus cannot be an obstacle to the education of children. Many children such as those of invalids of the Patriotic War, pensioners, partisans, are exempt from any fees. The low price of books and other educational accessories makes the education of all children possible. The State publishes text books at very low prices in order to make them easily available to all children As a comparison, a daily newspaper costs 15 kopecks, while an arithmetic text book for the first year costs 60 kopecks, i.e., only four times as much as the price of a daily news-

paper, such as is bought by every citizen. New text books are published annually in millions of copies.

(b) By giving grants to good students in technical schools, universities and institutes. Education in vocational schools is free of charge and good students are granted scholarships which cover all their expenses for their training period.

The fee for education in universities and institutes is 400 roubles per annum. But all good students receive a grant which ranges from 185 roubles a month in the first year to 300 roubles a month in the last year. Special scholarships are granted to exceptionally brilliant students.

(c) By carrying on education in the native language. Education in schools in every national republic is given in the children's native language. Children of different nationalities may study in Russian schools if they so desire, but even in such towns as Moscow and Leningrad, where the overwhelming majority of the children is Russian, national schools for Tatars, Armenians, etc. are to be found. Teachers may be of any nationality so long as they know the native language of their pupils.

CHAPTER 2.

THE EDUCATIONAL SYSTEM

The educational system of the Soviet Union consists of a network of *all types* of general and vocational schools and educational institutions, for infants, children and young people.

A. Educational institutions for children below school age.

Creches for infants up to 3 years old are under the supervision of the People's Commissariat of Health. Kindergartens for children of 3 to 7 years are under the Commissariat of Education.

B. Educational institutions for children and adolescents.

(a) General Education (primary, middle and secondary school).

(b) Special schools 1 Forest schools. 2. Schools for the deaf and dumb and for the blind. 3 Schools for backward and mentally defective children 4 Special schools for the arts.

(c) Residential educational institutions 1. Children's homes. 2 Suvorov schools

(d) Children's institutions for out-of-school activities

C. Vocational schools for children and adolescents:

(a) Trade and railway schools.

(b) Factory apprentice schools

(c) Teachers' training schools

(d) Medical schools (for nurses, etc.)

(e) Technical schools for different specialities.

D Higher Education—universities and specialised institutes.

All cultural-educational institutions such as libraries, clubs, reading rooms, theatres, cinemas, etc., come under the supervision of the educational authorities.

A. KINDERGARTENS.

The *Kindergarten* is an institution for children below school age (3 to 7 years old).

Kindergartens may be opened and run not only by the educational authorities, but also by any employing organisation or trade union. But supervision of the education and physical development of the children is exercised by the educational authorities.

Kindergartens are organised by the State to help the family. Children, whose parents are engaged in work during the day, must not be neglected. A child remains in a kindergarten from 8 or 9 a m to 5 or 7 p m., spending the rest of the time with its family

The day's time-table in a kindergarten includes games, educational play, walks, meals and sleep at definite hours. The older children learn reading and arithmetic. The fee for a child is low and children of war invalids, pensioners and of large families are exempt from all fees

The number of kindergartens is increasing yearly. There were only 275 kindergartens and playgrounds in 1919 which catered for 7,000 children, while by 1940 their number had increased 200-fold and reached the total of 55,102. They catered for 2,331,848 children.

B (a) GENERAL EDUCATION

The present structure of the general school was determined by the Soviet Government on May 16, 1934. There are three types of general school in all republics primary school, middle school and secondary school.

A school is directed by a headmaster or headmistress who is appointed by the educational authorities. In those primary schools where there are only two or three teachers a senior master or mistress is appointed instead of a head.

The head is aided by an assistant for study. His duties are . the efficient organisation of school life, the maintenance of educational equipment and supervision and control of the work of the teachers

The teaching staff of a school is recruited from trained, qualified people. A teacher in a primary school must possess a teachers' training school certificate, a teacher in a middle school must have finished a teaching institute, and a teacher taking forms 8, 9 or 10, must have finished an Institute of Education or education department of a University.

The teacher's salary varies according to the age group of his pupils, his own educational qualifications, and length of service. There is equal pay for men and women

The school year in all schools of the Soviet Union begins on September 1. During the year there are three short holidays in addition to the summer holidays which are from two to three months

The *primary* schools are found mainly in rural districts—in villages and remote mountain hamlets where the number of pupils is not sufficient to have a middle or secondary school. A primary school consists of four classes and is co-educational. In accordance with the law on universal compulsory education all children on reaching the age of seven must be sent by their parents to the primary school. The administration of a school has to see that all seven-year-old children in the district attend school. There is no examination for admission.

Among primary schools there are :

Full complement schools, i.e., schools with the full number of pupils in all four classes with a teacher for each class.

Two-unit schools, schools with less than the standard number of pupils per class. There are only two teachers in

such schools. Each teacher takes two classes (I and III, II and IV).

One-unit schools, i.e., small schools in which one teacher takes all lessons in all four classes

Middle schools have seven classes from I to VII. The first four classes are similar to those of a primary school. Pupils are admitted into the fifth class of a seven-year school on completing the fourth class, or from a primary school in another area. There is no examination on admission, the only qualification being the marks received by a pupil at the spring examinations on the conclusion of the fourth year.

The age of a pupil of a middle school must be between 7 and 8 in the first class and between 14 and 15 in the seventh.

The majority of middle schools are co-educational, but in large towns there are separate girls' and boys' middle schools.

Those who finish a middle school get a certificate which entitles them to (1) admission (without examinations) into the VIII class of a secondary school; (2) admission into secondary vocational schools (in some of them with, and in some without, examination), (3) admission to various short-term courses such as commercial courses. Those young people, who for one reason or another do not want to continue their studies, either enter industry or offices, taking up work which does not require any special qualification. But the Soviet Government encourages all such citizens to have a secondary education, and they are encouraged to attend evening classes which enable them to improve their qualifications later.

The *Secondary school* is a complete 10 years general school. There are secondary schools in all towns, in large villages, workers' housing settlements, etc. There is a

network of secondary schools in all districts of every town including the most remote suburbs

The first four classes of a secondary school correspond to the four classes of primary schools

The first seven classes of a secondary school correspond to the seven classes of a middle school.

Pupils attend a secondary school between the ages of seven in the first class and seventeen in the tenth class.

In towns with a large number of secondary schools, education is given separately to boys and girls. In such cases there are separate boys' and girls' schools. In provincial secondary schools with a small number of pupils the sexes are mixed

On finishing secondary school pupils receive a diploma testifying to their completion of secondary education. This diploma entitles them to admission into any of the higher educational institutions, and to different short-term courses requiring as a preliminary the completion of secondary education. Those students who get "excellent" marks in their examination for all subjects receive a diploma *cum laude*. This entitles them to be admitted into higher educational institutions without examination

A pupil finishing a secondary school can acquire any speciality by means of short-term courses. The majority of pupils from secondary schools usually want to continue their studies and go to a university or specialised institute.

The aim of *evening secondary schools for working youth* is to enable them to complete their secondary education without leaving their work. There are six classes in an evening secondary school—classes 5 to 10. The curriculum and syllabus are similar to those in ordinary secondary schools, the difference being only in relation to the organisation of studies and methods of teaching. Studies are carried out in cycles. Thus for instance, one term is taken

up by one group of subjects, the humanities (languages, literature, history); or by physicomathematical subjects (algebra, geometry, physics), in accordance with the syllabus. Having passed the examination for one cycle a student can take up the second cycle. Thus the students are enabled to cover the year's syllabus of an ordinary secondary school in one year. The lessons in an evening secondary school for working youth are given three times a week and last three hours at a time. On finishing these schools the students receive diplomas testifying to the completion of their secondary education and all the rights that this affords.

THE AIM OF THE SOVIET SCHOOL

The aim of the Soviet school is to give general education to the citizen and to make him a useful member of the community.

All general schools in the Soviet Union have broadly the same syllabus, but the national characteristics of each republic are of course taken into consideration and the timetables of all non-Russian schools have to allow a definite number of hours for the native language, literature and national history.

Text-books are also uniform. They are approved by the People's Commissariats of Education for a period of several years. Children in all schools use, for example, the same physics text-books, and solve problems taken from the same book of exercises. Text-books are compiled either by the most experienced teachers or by eminent scientific workers and are approved by committees of scientists and public workers.

This is how the history text-books, for instance, were compiled.

Following a decision of the Council of People's Commissars, a competition for the best elementary history of

the U.S.S.R. for primary schools, with brief references to general history, was held in 1936.

All the leading professors of history took part in the competition. The jury chose as the best text-book the "Concise History of the U S S R." compiled by the Faculty of History of the U S S R at the Moscow State Educational Institute, under the leadership of Professor A. V. Shestakov.

The Council of People's Commissars set up five groups to prepare history text-books for the fifth to tenth classes and approved their results. The drafts of these text-books were revised by the most prominent scholars and statesmen of the country. Stalin, Kirov and Zhdanov took a personal interest and made numerous suggestions which helped the authors of these text-books.

The uniformity of educational curricula, syllabuses and text-books assures the realisation of the principle of the uniform school, a uniform standard of education for the younger generation and State supervision over the school. This enables pupils to take up their studies without examination and without difficulty in the corresponding class of a new school when moving to another town.

The curriculum for secondary schools includes the following subjects: Russian language and literature, mathematics (arithmetic, algebra, geometry, trigonometry), physics, chemistry, natural sciences (botany, zoology, human anatomy and physiology, theory of evolution, geology and mineralogy), astronomy, the Constitution of the U S S R, history (ancient, medieval, modern), history of the U S S R., geography, one foreign language, physical training, writing, draughtsmanship, art, singing, and military training (elementary military knowledge which the young men will require when joining the services).

The study of natural science, physics and mathematics occupies an important place in all curricula.

The hours devoted to each subject are distributed as follows.

<i>Subject.</i>	<i>Number of hours per year, according to the curriculum adopted in 1942/43</i>	
	<i>Number</i>	<i>Per cent.</i>
Russian language and literature ...	2,676	28.4
Mathematics	2,092	22.0
Physics, chemistry, astronomy ...	848	8.9
Natural sciences	523	5.5
Geography ..	570	6.0
History and Constitution of U.S.S.R.	797	8.3
Modern languages ..	653	6.8
Writing, draughtsmanship, art and singing	830	3.4
Physical and military training . .	1,048	11.0

THE ORGANISATION OF EDUCATIONAL WORK

In the first four classes all principal subjects are taught by one teacher, who takes a class from the day of their admission to the end of the fourth class. Starting from the fifth class the lessons are given by specialists.

The progress of pupils is assessed by means of marks from 1 to 5. From the fourth class onwards all pupils have to take an end-of-year examination

The methods used in the Soviet school are various, but they are all subordinated to these fundamental principles: they must be based on a conscious and intelligent assimilation by the child of the given subject and must be as thorough and as much linked with practice as possible.

Lenin used to say that to become an educated man one "...has to enrich one's mind with all the wealth of knowledge that mankind has accumulated "

"We do not want mechanical assimilation, but we want to develop and improve the mind of every pupil by knowledge of basic facts. You must not simply learn them, but acquire them in such a way as to allow a development of a critical approach, to prevent the mind from becoming congested with masses of unnecessary material."

This proposal of Lenin was laid down as the foundation for the education of children. Education authorities have to make sure that a subject is presented logically and methodically, that the teacher develops in the children a capacity for independent work with books, in laboratories, and in workshops, and that he makes use of available visual apparatus, experiments, and excursions.

CHARACTER TRAINING

Besides the academic task, every teacher is responsible for character training and the general development of the pupils, for training the "new man."

"This new man," said President Kalinin, "must be infused with the best qualities of man. These qualities are love for the people and for the working masses, honesty, courage, solidarity, and love for work. One has not only to love work, but to carry it out honestly, bearing in mind all the time that whoever eats and exists without working lives on the fruits of someone else's labour."

A firm and conscious discipline in class is a fundamental principle of conduct.

Persuasion and explanation to the pupils of what is required from them coupled with the firm demand that they should observe accepted rules are the main methods of obtaining good behaviour. Punishment is used in schools,

but its application is strictly controlled by the education authorities. Corporal punishment, detention which causes children to miss their meals, and similar methods are absolutely forbidden.

The following measures are in use:

Rewards. Praise by the teacher, and certificates of merit issued by the head of the school.

Punishments. Reprimand by the teacher, public reprimand in the class room, order to the pupil to stand up, order to leave the class room, loss of conduct marks, reprimand at a meeting of the Teachers' Council, or finally, expulsion from the school (temporary expulsion must be approved by the district education authorities).

Special "Rules for Pupils" regulating their conduct both inside and outside school, are approved by the Government. For example, pupils must not go to cinemas, theatres and other places of entertainment during school hours. They are expected to be kind and helpful to old people, small children, the weak or ill. They must give them first place, and offer them their seats in trams and buses and assist them in every way.

The main responsibility for the general development of the pupils rests with the head teacher, but in addition one of the senior teachers is appointed by the head as responsible master or mistress for every class. This teacher organises these pupils, helps them in their "self government" and in the work of Young Communist League and pioneer organisations.

There are clubs and societies (called "circles") in every school. They usually meet once a week after school hours and work under the supervision of a teacher or other qualified person.

Once a month evening performances are organised in schools in which the pupils take part.

THE "PIONEER" AND "KOMSOMOL"* ORGANISATIONS

The main task of the Pioneer and Komsomol organisations is training for good citizenship. Duties connected with the Pioneer and Komsomol organisations develop in the children a sense of responsibility towards the community and accustom them from childhood to carry out social duties.

Pioneers consider it their duty to be an example to other children: to study well, to help their family at home and their school-mates at school. Pioneers are organised in detachments and groups. They have a banner of their own, wear a red tie, bring out a wall newspaper of their own, and salute one another in a special way. At gatherings of these detachments they read, or listen to talks given by adults, rehearse plays, recite poetry, play games, and so forth.

The members of Komsomol who are in the senior classes guide the activity of the Pioneer organisations. Thus, members of the Komsomol help the head and other teachers in the work of bringing up the younger children. They are the most conscientious and energetic pupils and organise the out-of-school activities. Under the guidance of teachers they edit wall-newspapers, organise different activities (technical, artistic and sport).

The war has shown that the schools have fulfilled their task and have given the country millions of soldiers full of courage, self-sacrifice and patriotism.

B. (b) SPECIAL SCHOOLS

1. *Forest schools for children with delicate health.*
Forest schools are boarding-schools and sanatoria combined,

* Russian abbreviation for the "Communist Union of Youth."
The "Pioneers" are an organisation for the younger children.
[Translator's note]

where children get medical treatment, sometimes for several years, and simultaneously continue their studies, under supervision of a doctor, following as far as possible the normal syllabus.

2. *Schools for the deaf and dumb, weak-sighted and blind.* These schools function as an independent type of educational institution with a special curriculum and syllabus, special text-books, equipment and apparatus. There are special scientific departments at the People's Commissariats of Education which supervise the work of such schools.

3. *Schools for mental defectives.* There are not a great many schools of such type. Special curricula and syllabuses are prepared for such schools, as well as special text-books and apparatus, to enable a mentally deficient child to get an elementary education and acquire some suitable manual profession by the age of 15 or 16.

4. *Special art schools.* There are special art schools in large towns for exceptionally gifted children. The schools of music attached to the Conservatoires, ballet schools attached to theatres, schools of painting and so on. They are supervised by the Committee for the Arts of the Council of People's Commissars of the U.S.S.R. In addition to special subjects, pupils in such schools also take general subjects in accordance with the secondary school curriculum.

B (c) RESIDENTIAL EDUCATIONAL INSTITUTIONS

1. Homes for children of school and pre-school age. Such institutions cater for orphans, who remain in them up to the age of 14, get a general education up to middle school standard and acquire skill. At the age of 14, a pupil is sent by the Administration of a Children's Home to a vocational or technical school which has a hostel attached to it.

2. *Suvorov military schools* are residential secondary schools and cater for sons of Red Army men and officers, of partisans and for orphans whose parents perished in the war. Suvorov military schools prepare boys for military service, giving them an officer's training and a *general secondary education*.

Suvorov schools are under the People's Commissariat of Defence

B. (d) OUT OF SCHOOL CHILDREN'S INSTITUTIONS.

These include. Libraries, Pioneer clubs, technical centres for children, centres for young naturalists, excursion and tourist centres, sports centres and sports stadiums, skiing centres, swimming pools and other institutions, centres for the arts, children's cinemas and theatres.

The task of these institutions is to help the academic work of the school and to provide healthy and creative forms of leisure. They enable youth of school age to carry on studies after school hours in subjects in which they are particularly interested, to enlarge their general knowledge and to improve their physique

C VOCATIONAL SCHOOLS

(Technical schools, railway schools, factory schools.)

The task of these schools is to train skilled personnel for transport and industry.

The training of skilled workers, owing to the constant growth of heavy industry, has been occupying the Soviet Government from the very first days of its existence. Prior to 1940 there were factory apprentice schools attached to factories. These schools trained two-and-a-half million skilled workers for industry during 20 years. Short-term courses trained 8,300,000 skilled workers. Despite this

there was by 1940 an acute shortage of skilled labour in transport and industry which was caused by the fact that hundreds of new plants, mines, railways and power-stations were coming into operation.

In view of this shortage a government decree of October, 1940, provided for a tremendous extension of trade, railway and factory schools.

Boys and girls between 14 and 15 years old with not less than a primary education are admitted into trade and railway schools. The training lasts for two years.

These schools train metal workers, oil workers, assistant engine drivers, railway repair workers, etc

Factory apprentice schools train workers for jobs of average skill in industry and the building trade. The training lasts six months. Boys and girls of 16 to 17 irrespective of their previous education are admitted to these schools.

The training in all these types of schools is carried out under conditions which as far as possible correspond to those existing in industry itself. The pupils in their training use the actual industrial raw materials and work on lathes of the latest models. They receive for their products 30 to 100 per cent of the remuneration usually paid for work of that kind. This enables the State to make use of these schools to carry out important State assignments.

Thus, for instance, one of the technical schools manufactured 30,000 mines during two years of the war and reconditioned 6,000 rifles, 280 guns, 250 machine-guns, and 240,000 navigational instruments for the air force.

There are special technical colleges of the State labour reserves which train teachers for all three types of school.

The training, and the distribution of the trained workers, is supervised by the Central Department of

Labour Reserves of the Council of People's Commissars of the U S S R. and by the local administration of labour reserves.

Technical schools of different specialties, teachers' schools and junior medical schools (for nurses, midwives, etc), are *vocational schools* which accept young people of 15 or 16, who have finished the middle or seven-year school. Training lasts three or four years. They train specialists of average skill (nurses, technicians, teachers for primary and infant schools, etc)

There were in the U.S.S.R. 3,695 such technical schools (or "technicums") with 802,200 students during the 1940-41 school year, as follows

	<i>Number of Technicums.</i>	<i>Number of Students. (in thousands)</i>
Industrial	549	177 0
Transport and communications	156	52 1
Agricultural	735	111 3
Law	36	4 0
Teachers' training	834	197 6
Medical	1,042	203 5
Art	202	23 7
Economic organisation	141	33 0

D HIGHER EDUCATION.

(Universities, Institutes and Colleges).

Universities and single-faculty institutes admit men and women who have completed their secondary education and passed the entrance examination or have obtained full marks in their final school examination.

Only 15 per cent. of all students were women in the universities of Tsarist Russia. In 1938 43 per cent. of the total number of students were women.

The Soviet Government and the Communist Party consider the problem of training qualified personnel to be of very great importance. In his letter to the first All-Union Conference of Proletarian Students in 1925 Stalin wrote :

“Higher educational establishments and Communist institutes, workers’ faculties and technicums are schools in which key people for economic life and culture are trained. Doctors and economists, co-operators and teachers, mining engineers and statisticians, technicians and chemists, agricultural and transport workers, veterinary and forestry workers, electricians and engineers are the future leaders in the building of the new society, in the creation of the socialist economy and socialist culture. It is impossible to build a new society without new leading personnel. . . .”

The number of higher educational institutions increased from 91 to 788 in 20 years. The number of new technical institutions is especially high. There are institutes for every branch of the country’s economy.

DISTRIBUTION OF HIGHER EDUCATIONAL INSTITUTIONS.

<i>Types of Higher Education.</i>	<i>Year.</i>	
	1917	1940
1. Universities and Single Faculty Institutes for the Arts	45	398
2. Medical Institutes	9	78
3. Agricultural Institutes	10	86
4. Technical and Transport Institutes	14	152
5. Economic Institutes	6	43
6. Art Institutes	7	25
Total	91	782

The cultural development of all the national republics which make up the Soviet Union is one of the main tasks of the Soviet State. The problem of building universities in the national republics where before the revolution they were almost non-existent has been treated by the Soviet Government with the same high degree of attention as the building of schools.

There are at present in the non-Russian republics: 21 university colleges in Georgia, 9 in Armenia, 19 in Kazakhstan, 28 in Uzbekistan, 15 in Azerbaidjan, etc

Children of workers and peasants and junior office staffs had no opportunity of getting higher education in pre-revolutionary Russia as the cost was too great.

To-day higher education is available to all who can qualify for it. Students' hostels, dining rooms serving meals at low prices, libraries and reading rooms are available to all.

The accessibility of education to large masses of the population is illustrated by the following data. In the school year 1914-15 the children of the nobility and high officials numbered 38.3 per cent of the total number of the students in eight universities, middle-class children 24.4 per cent.; children of tradesmen—11.4 per cent.; children of rich peasants—14 per cent.; children of the clergy—7.4 per cent.; children of manual workers—none. In 1938 children of manual and office workers and of peasants numbered 97 per cent. of the total students in universities.

Alongside the regular education there exists in the U.S.S.R. an extensive system of correspondence courses which enables students to study without abandoning their work

At the beginning of the war there were 11,795,000 correspondence students.

The length of studies in universities is four to five years, but in teachers' training institutes it is two years.

Those who graduate from institutes are guaranteed jobs. The People's Commissariats and the Committee on Higher Education send young specialists to work in the federal republics, regions and districts according to the requirements of Soviet economy and their personal choice.

Higher education is supervised by the Committee on Higher Education. This committee approves the curricula, syllabuses, building programme, and exercises general supervision. The Departments for Higher Education, which are organised at all the Republican People's Commissariats of Education, function under the authority of this committee. Higher educational institutions catering for a particular branch of the country's economy and culture are run by these departments.

Every university or institute is headed by a chancellor or rector aided by a senate.

Such a centralised system of direction makes it possible to plan the training in accordance with the requirements of every branch of the country's economy.

The curricula and syllabuses are such as to enable students to acquire not only the knowledge necessary for their particular speciality, but also the general knowledge covering the speciality as a whole, and to have an appreciation of the humanities. To achieve this, the first three years are devoted to lectures giving a general picture of the speciality, and the fourth and fifth years—to a serious specialisation in a particular branch of the subject. Besides lectures on special subjects, the time-table at all institutes includes also social and economic courses as well as physical and military training. To enable a student to take up a job as an experienced specialist immediately on graduating from an institute, the syllabus

provides for *compulsory practical* training in factories, agriculture, hospitals, schools and in the communication services, according to the student's speciality. Students have to attend *compulsorily* not only lectures, but also laboratory work, workshops and so on.

The military and physical training of students comes within the time-table, but additional work is done after the regular hours, in sport organisations, clubs, and at stadiums. The trade union and Komsomol organisations regularly carry out what are termed "test parades," covering the military training of students, competitive games, ski runs, cross-country runs and marches, and so on.

The teaching staff of a faculty consists of professors, lecturers and assistants. There are two scientific degrees in the U.S.S.R.: Doctor of Science and Candidate of Science. The rank of Professor is conferred upon Doctors of Science, and that of Reader or Lecturer upon Candidates of Science.

In the school year 1940-1941 in all institutes of the U.S.S.R. there were 5,353 professors, 13,105 lecturers or readers, and 31,557 assistant lecturers and instructors without degrees.

Universities have special post-graduate courses which train professors, lecturers and scientific personnel. These courses are taken up by the most gifted and successful students who desire to devote themselves to scientific work after graduating.

In the school year 1940 to 1941 there were 12,266 such students.

Students training for university teaching are granted State allowances and are exempted from all fees. When they graduate they have to defend a thesis, after which, if they pass, the degree of Candidate of Science is conferred on them.

CHAPTER 3.

THE EDUCATIONAL SYSTEM IN WARTIME

A. SCHOOL.

The war interrupted normal school activities. The schools had to undertake new tasks such as helping in the evacuation of children, organising aid to evacuated children and especially orphans, the provision of clothing, shoes and hot meals for children, and the provision of help to collective and state farms in agricultural work

In the first days of the war the Soviet Government ordered the evacuation of all children below the age of 14 to the eastern regions of the Soviet Union.

Children's homes, kindergartens and technical schools left with pupils, staff and equipment. Pupils of general secondary schools were evacuated either together with their parents, or as boarding schools under the supervision of their teachers. Some factories, enterprises and offices organised, at their own expense, boarding schools for the children of their employees.

Long trains carrying children left for the Eastern regions situated thousands of miles away. Children were often in great danger as German pilots frequently bombed and machinegunned the trains. Although they travelled under the protection of Soviet fighters, many of them were killed and others suffered injuries that have crippled them for life.

The children were terrified and worn out by all they had to go through. They had to be welcomed, comforted, housed and given an opportunity of continuing their studies.

The local authorities prepared beforehand kindergartens, boarding schools and children's homes, provided them with

furniture, crockery and kitchen utensils, underwear and even with allotments. The allotments of children's homes in the Sverdlovsk region alone totalled 2,891 acres.

But the time available was too short for a complete preparation. Much had to be done by teachers and children themselves. They took part in the work of reconditioning houses, collected and transported fuel, and cultivated their own allotments. This went on throughout the whole period of evacuation.

The local population gave much assistance to the evacuated children. Industrial and office workers helped in their spare time to recondition school buildings, and women washed, mended and sewed the children's clothes. Collections to aid the children were carried out throughout the country.

"During the days of preparation and celebration of the twenty-sixth anniversary of the Red Army alone, the youth of Moscow city and region collected 24 millions roubles from the population, and 1,370 tons of foodstuffs for the 'Soldiers' Children's Fund. During the same period Moscow factories produced after working hours and above plan 350 thousand yards of cloth, thousands of pairs of shoes and underwear as well as knitted and fur articles of clothing for the evacuated children" ("Vechernyaya Moskva.") All towns and villages throughout the country did their share in the same way.

Many families adopted children. They were made to feel happy and at home with their new families, and their dreadful memories gradually faded and they became once again healthy and cheerful.

The number of children adopted by families totals over 100,000.

In spite of the war education continued. The evacuated children used the local school buildings.

There were a great many difficulties: inadequate accommodation, insufficient text-books, pens, pencils, and other equipment.

A number of teachers had been called up, others had joined the partisans.

There were 1,222,805 teachers in 1941. Their number decreased by about 50 per cent., reaching the figure of 774,795 by the beginning of the school year 1943-44.

To enable all children to get education there had to be two and even sometimes three shifts in the schools, and the number of pupils per class increased to 40 or 45.

A number of schools in Leningrad carried on work even during the siege. Children did everything not to miss school, although class rooms were freezing and the children often had nothing to eat at home. They received supplementary food rations at school in accordance with a special decision of the Leningrad Soviet.

In the middle of October, 1941, when the enemy was close to Moscow and German planes were bombing it day and night, the regular work of the Moscow schools was seriously interrupted. But tutorial sessions were still held at the schools for children who studied at home and later sat for their examinations.

Normal studies in the Moscow schools were resumed in the autumn of 1942.

The overwhelming majority of schools, institutes, clubs and libraries, in regions temporarily occupied by the enemy, were destroyed. In Stalingrad and the Stalingrad region alone the Germans destroyed 567 schools and 186 children's homes.

The restoration of schools in the liberated regions and in the front line areas began in 1942. In those villages where school buildings had been destroyed, schools were housed in the best available buildings of the village;

peasants often offered their homes for school purposes. The local authorities, parents, teachers and pupils themselves helped to repair schools, furniture and equipment. Special brigades of engineers, builders and technicians were sent to these regions; architects have worked out plans for temporary school buildings.

Despite the fact that the whole of our industry was engaged on war work, the Council of People's Commissars of the U.S.S.R. ordered that school furniture be manufactured. Thirty-five thousand desks were despatched to the Stalingrad, Rostov, Kursk and Orel regions in 1943.

Text-books, education apparatus and stationery have been sent by the People's Commissariats of Education of the Union Republics to the liberated regions; 5,649,700 text-books, 19,419,000 exercise books; 86,559,000 pencils, 3,319,000 pens were sent by the R S F S R in 1943.

Where only yesterday there was the front-line, to-day school activity is in full swing

524 schools with 50,000 pupils were functioning in Rostov-on-Don and the surrounding region only four months after the Germans had been driven out.

1,272 schools with 143,619 pupils were functioning in February, 1944, in districts of the Smolensk region which had been liberated in August, 1943.

The number of schools decreased from 193,025 to 116,548 in 1941-42, but already 140,156 schools were functioning in 1943-44

To provide the necessary number of teachers the Government released all teachers who since the beginning of the war had been engaged on other work. A decree increasing the salaries of teachers was issued in August, 1943. Expenditure on teachers' salaries was almost doubled in the R. S F S R. In accordance with a government deci-

son, teachers get rations equal to those of transport and industrial workers and in addition get their lunch at school.

The Government is caring for children in the same way. They have hot lunches at school and delicate children have a special diet. In accordance with a decision of the Council of People's Commissars of the U.S.S.R. special allocations of different types of goods have been made available for children. These allocations provide children's homes, kindergartens, schools and boarding schools with footwear and clothing for those children who are in need of them.

Sanatoria, summer pioneer camps of sanatorium type, and children's summer play centres have been set up to help in the restoration of the health of children who have had to live in occupied regions or in besieged towns. These institutions are free of charge for the children.

Over a million urban school children left their cities for pioneer camps during the summer of 1943.

In order to provide education and training for the children of Red Army men and officers, partisans, as well as children whose parents perished at the hand of the German invaders, the following institutions were organised in the year 1943/1944.

Number of Children.

9 Suworov military schools	4,538
23 special technical schools	9,000
18 special children's homes	16,300
26 special homes for small children	1,850

Expenditure for education in 1944 was nearly double that for 1943 (21 1 thousand million roubles, as compared with 12 7 in 1943)

Curricula and syllabuses have not been changed during the war. Only text-books for primary schools have been

enlarged by information on how the country was living, working and fighting against the Germans during the war. Despite wartime difficulties examinations show that the work of pupils has not deteriorated in comparison with pre-war years.

The Soviet Government, which has been devoting a great deal of attention to the problem of education, has during the war carried out a number of important measures aiming at a further improvement of school activities.

Certain changes have taken place, as follows.

1. Separate education of boys and girls has been introduced. Boys' and girls' schools have been opened in 80 large towns of the Soviet Union. All the schools use the same text-books and have the same curriculum and syllabus, but separate classes make it possible to take into consideration the special characteristics of the physiological development of boys and girls, certain of their psychological characteristics, and differences in training and preparation of boys and girls for practical life.

- 2 More attention is being paid to military and physical training in boys' than in girls' schools. Boys do military training and sports, not only during school hours, the total of which is equal in both types of school, but also after school hours.

In 1942 a decree of the Council of People's Commissars of the U.S.S.R. was published "on preliminary pre-service military training of pupils from the first to the tenth class of the middle school, secondary school and technicum" and "on military and physical training of pupils in primary schools and those of the first four classes of middle and secondary schools."

These decrees drew the attention of those in charge of schools to the military and physical training of pupils.

The number of hours given in schools on military matters and physical training was increased

In 1938, 596 hours were devoted in the course of the whole year to military and physical training. This represented 62 per cent of the total, in 1943 the number of hours amounted to 1,048, i.e., 110 per cent of the total

During the summer holidays pupils of the eighth to tenth classes attended camp for a fortnight. In the course of lessons on military matters and at camp instructors devoted their attention mainly to providing youth with practical knowledge of shooting, map reading and battle formation

At the same time pupils were shown in the course of lesson on physics and mathematics how these subjects are connected with military science

A children's sports organisation "Smena" ("Shift") was created in July, 1943. By the end of 1943 members of this organisation in the Russian Federation alone totalled over 670,000

3. In 1943 the age of admission to school was lowered from 8 to 7 years.

4 The same year the People's Commissariats of Education of the Union Republics worked out and approved new "Rules of Conduct for Pupils"

5 A special type of school—evening schools for working youth—became especially widespread during the war. This arose out of the fact that a large number of young people of 15 or 16, unable to finish their studies at secondary schools, went to work during the war; 1,005 such schools with 153,710 pupils have been opened in the R S F S R.

Help rendered by children to the State.

Senior pupils, under the supervision of teachers, helped during their summer holidays with the work of collective and state farms. This was necessary because the state and collective farms were short of man-power owing to the fact that a large number of men had joined the services. Some 45 million pupils and 800,000 teachers helped in this work on the land in 1942. In addition, during their summer holidays, children collected berries, mushrooms and medicinal herbs for various purposes.

According to incomplete figures, pupils of 20 regions collected and delivered to the local authorities of the People's Commissariat of Trade 344 tons of dried mushrooms, 5,764 tons of pickled mushrooms, 5,153 tons of berries and fruit, and 1,150 tons of medicinal herbs.

Members of the Pioneer and Komsomol school organisations played a leading part in this help rendered by children to the war effort.

Pioneers in their spare time helped the wives of servicemen with their housework. They helped to look after small children whose mothers were working in the collective farms and factories. In summer the pioneers helped the families of servicemen on their allotments. In winter they stopped at school after school hours and made toys for small children and presents for Red Army men. Members of the Komsomol cut and sawed wood, brought it in for the winter and trained the people for A.R.P. work. They acted as roof-spotters during air-raids and saved many buildings from destruction by fire.

An outstanding example of Soviet youth is Zoya Kosmodemyanskaya, a pupil of the tenth class of one of Moscow's schools, who joined the partisans. With courage she met her death at the hands of the Germans. She was posthumously awarded the title of Heroine of

the Soviet Union. She is to-day one of the country's most famous people. Lisa Chaikina and Shura Chekalina and a host of other heroes of the Soviet Union were also the product of Soviet education.

B VOCATIONAL SCHOOLS.

Technical and railway schools, as well as factory workshop apprentice schools became especially important during the war. The majority of adults were called up to the services and industry was lacking skilled labour. Technical schools were urgently needed for training young people for skilled work.

The Magnitogorsk metallurgical technical school No 13, during six months of 1943, produced in its open-hearth furnaces steel sufficient to manufacture 10 million hand grenades, 15 million mines, 1.5 million tommy-guns and over 3,000 tons of steel for heavy tanks

Goods manufactured by pupils of vocational schools have covered, in value, about half the cost incurred by the Government for their maintenance.

Factory workshop apprentice schools trained 1½ million skilled workers during the period from the beginning of the war up to July, 1943

C HIGHER EDUCATION

At the beginning of the war there was a decrease in the number of both institutes and students. Important universities and institutes were evacuated to the rear.

The numbers of institutes functioning and of students during the war are as follows —

<i>Years</i>	<i>Institutes</i>	<i>Students</i>
1940-41	782	564,573
1941-42	503	312,868
1942-43	460	227,445
1943-44	515	320,780

„ The evacuated universities had to work in very unfavourable conditions. Suitable premises were scarce, part of the libraries were not evacuated, and there were not enough professors and lecturers. Difficulties in the food situation made it necessary for the institutes, trade union and Communist Party organisations to cope also with the problem of providing students and professors with food, accommodation and essential commodities.

The decrease in the number of students is to be explained by (1) the fact that among the students who graduated from universities in 1941 there were not only students who had completed five years, but also who had only completed four, (2) a number of students volunteered to join the forces, (3) a number of students went to work in view of the urgent requirements of industry, (4) the number of students admitted to the first year was lower than in previous years.

As the country required doctors, engineers, constructors, physicists and technicians in larger number than before, the institutes, in order to meet these requirements, temporarily reduced the length of the courses while keeping the syllabuses unchanged. At the same time the length of the academic year was reduced, the year in 1941 and 1942 started on October 1st and not on September 1st as in pre-war years. This was due to the fact that students helped during the summer and autumn on collective farms, in forestry and in the peat industry.

In the regions temporarily occupied by the Germans all educational institutes were destroyed. Kiev University—one of the oldest in the country—was destroyed and its library plundered. The German barbarians made Kharkov University laboratories into workshops and turned its lecture halls into barracks.

Since 1943 the return to the west of the universities and institutes and the restoration of damaged institutes in regions liberated from the Germans has been going on continuously. In 1943 the following were restored: Stalingrad Education and Teachers' Institutes, the Kursk Education Institute, the Pyatigorsk Education and Teachers' Institutes. Work on the reconstruction of Kiev, Kharkov and other universities was also started.

Special funds have been allocated for the reconstruction of these institutes. Those of the rear regions have donated a part of their equipment to the restored institutes in liberated territory. e

The normal length of courses was restored in the autumn of 1943.

To increase the number of entrants, universities, such as for instance Moscow University, Moscow Aviation Institute and Leningrad University, have opened preparatory courses. Such courses have enabled potential students to cover the syllabus for the ninth and tenth classes of secondary school in one year or six months. They can then sit for the entrance examination.

There has been no fundamental change in the syllabuses for higher education, but studies were naturally conducted according to war-time requirements. Practical work has always occupied an important part in the curriculum, but its importance has increased still further in the years of war.

A great deal of attention is being devoted to the military training of students. The so-called "military day" has been introduced. During that day, once a week, students undergo military training which includes drilling, tactical exercises, firing, ski-ing, swimming, etc.

The Government has done everything possible to raise the living standard of students and to give them oppor-

tunities for study. For this purpose increased allowances for students have been introduced in a number of universities, students who are war invalids and those whose parents died in action are exempt from all fees, students' rations are equal to those of transport and industrial workers, students with delicate health are provided with special diets, certain institutes have special students' canteens which the Government provides with extra food, and they have their own allotments cultivated by students and professors.

To provide the necessary scientific staffs post-graduate courses which were abolished at the beginning of the war were re-introduced in 1943.

All these measures have enabled higher education to continue despite war-time difficulties and provide the country with highly skilled personnel for all branches of its economy.

The Tenth Session of the Supreme Soviet in February, 1944, fixed the rate of reconstruction work as regards higher education for 1944, as well as the number of students. The expenditure allocated by the State budget was sufficient to restore 86 institutes in regions liberated from the German invaders. This means that the number of students for the whole of the country will show an increase of 40.6 per cent.

SCIENCE

SOVIET SCIENCE IN THE SERVICE OF THE PEOPLE

I SCIENCE IN RUSSIA BEFORE THE REVOLUTION

SCIENCE in our country has a long and distinguished history, and the Soviet Union received a not insignificant heritage from pre-revolutionary Russia.

In the days of Peter the Great at the end of the seventeenth century, firm commercial and cultural connections between Russian and Western Europe began to be established, and a rapid growth of science began once the country had defeated the Swedes and consolidated its position. The most symptomatic expression of this growth was the foundation of the Academy of Sciences at St. Petersburg in 1725. The Academy became the cradle of new-born Russian science. By the side of famous foreigners like the mathematician Euler and the engineer Bernoulli, there soon appeared in it excellent Russian academicians as well, and first and foremost M. V. Lomonosov, the pride of Russian science.

This son of a peasant from our northern seaboard embodied the genius, the breadth of mind and the energy of the Russian people. Rapidly acquiring the book-learning which at that time was still being taught in the old fashion in Moscow, Lomonosov was sent to the Petersburg Academy, whence he soon went abroad to study with a number of other young Russians, among them the future inventor of Russian porcelain, Vinogradov. Five years later Lomonosov returned to St. Petersburg, and here at the Academy, for a quarter of a century, his scientific and poetical genius unfolded in unusual variety.

Lomonosov was the majestic dawn of a new Russian culture. He was a great chemist and physicist; he was the first to prove by experiment the conservation of matter in chemical changes, he worked out the atomic theory of gases, he was the creator of a new and important branch of science—physical chemistry. Astronomy owes to Lomonosov the remarkable discovery of the atmosphere of the planet Venus.

He was the author and constructor of many new optical instruments, the inventor of Russian mosaic, a geographer and geologist, an historian and the compiler of the first Russian grammar. And at the same time, Lomonosov was a splendid poet and an outstanding artist who with his own hands devised artistic mosaics. Even to-day, two centuries later, the figure of Lomonosov, in all its variety, originality and strength, seems difficult to imagine.

Lomonosov left his country an example for all time of how science can and must serve the people.

The particular importance of the Academy of Sciences in the eighteenth century was that from the first years of its work it became the organiser of the manifold study of Russia itself—of its geography, vegetation, animal world and natural resources. It was thanks to the work of Academicians like S. P. Krascheninnikov, P. S. Pallas, I. I. Lepekhin, S. G. Gmelin, N. P. Rychkov and N. Y. Ozeretskovsky that Russia for the first time came to know herself.

Gradually there began to arise, by the side of the Academy, other centres of learning—universities and specialist higher schools at Moscow, Kazan, Kharkov and other cities, the Academy of Military Surgery at St. Petersburg, learned societies and institutions, and military educational establishments.

During the two centuries from the age of Peter the Great to the October Revolution, our country produced a worthy array of great and outstanding scientists in many branches of knowledge, made its vast contribution to world science, and rendered no little service to its people even in the difficult conditions of Tsarist Russia, when science was often merely "tolerated," and feared as the destroyer of "fundamentals," i.e., of reactionary principles

Among the famous mathematicians of pre-revolutionary Russia we are particularly proud of N. I. Lobachevsky, who discovered, one may say, a whole world of so-called non-Euclidian geometry. Lobachevsky with every justification is often compared to Copernicus.

Among the number of outstanding Russian physicists who followed M. V. Lomonosov, there are V. V. Petrov, who discovered the electric arc, E. K. Lentz, the discoverer of important laws of electro-magnetism, B. S. Jacobi, the inventor of galvano-plastics, P. N. Lebedev, who was the first to prove by experiment the pressure of light and to measure it, A. G. Stoletov, who discovered photo-electricity, B. B. Golitsyn, who created the science of the quantitative study of earthquakes (seismometry)

In the history of pre-revolutionary Russian chemistry there shines the name of D. I. Mendeleev, who discovered the great periodic system of the chemical elements, which transformed the seeming diversity of chemical phenomena into a basic and strict law of nature of the very greatest significance. Our chemists Zinin and Butlerov were in the front rank of the creators of modern organic chemistry.

Russian geographers rendered incalculable services to their country. Some of them have already been mentioned, and to these must be added the famous names

of Miklukha-Maklay, Kropotkin, Przhevalsky, Kozlov and many others. This vast country, covering a sixth part of the land surface of the globe, and many other parts of the earth were studied and described in detail by these courageous travellers and scientists.

The scientists of pre-revolutionary Russia also made many additions to the science of life itself, biology. Of great importance for the theory of the development of the animal world was the brilliant work in the field of evolutionary embryology by K. M. Behr, A. O. Kovalevsky and I. I. Mechnikov. The famous botanist K. A. Timiryazev in his works ascertained the basic physical aspects of the most important process of the absorption of carbon dioxide from the air by green plants under the influence of light. The physiological work of I. M. Sechenov and I. P. Pavlov laid the foundation of an entirely new conception of the phenomena of consciousness, thought and brain processes.

Pre-revolutionary technique in our country was also symptomatic of the immense creative scientific powers of the people. In the eighteenth century the self-taught engineer Kulibin constructed bridges with remarkable mechanical qualities, and another, Polzunov, invented a steam engine. In the nineteenth century Academician Jacobi invented galvano-plastics and built the first motor boats, the engineer Yablochkov was the inventor of the arc lamp, and Lodygin of the incandescent electric lamp. Popov was the first to give practical effect to radio. N. E. Zhukovsky was a most outstanding theoretician of the aeroplane.

At the same time the destinies of these inventions in pre-revolutionary Russia were nearly always melancholy. The proper conditions did not exist in the country for their being brought into real life and for their introduction in practice on a large scale. Frequently important inven-

tions went abroad, where they were widely adopted or else simply forgotten, leaving no trace. Tsarist Russia was not a suitable field for the development of modern large-scale technique.

Repeating the well-known lines of Lomonosov, one may say that the history of science in old Russia proved beyond doubt

“That Platos not a few,
Quick-witted Newtons too,
The Russian land can breed ”

But fully to value these “Newtons,” to apply their thoughts and scientific discoveries to real life, to build up schools and successors around them—this for the most part was beyond the capacity of those times. There were good places of higher education, but they were very few, and great scientists in most cases remained solitaires, without pupils to continue their work. There was no one to see to it that all spheres of science and technique were represented in the country. In most important branches of science sometimes not a single specialist existed in old Russia.

Peter I. did a great work into ancient Russian learning with its Byzantine traditions and inertia, he breathed the new spirit of Galileo and Newton. For two centuries that learning went on growing. It gave Russia Lomonosov, Lobachevsky and Mendeleyev, but it was inadequate in its scope and in its penetration into life.

The further development of Russian science was fettered by the reactionary system on which the rule of the nobility and the bourgeoisie reposed. It was only the Socialist revolution that could transform Russian science into a mighty force that assisted in the building of a people's State, in its defence and in the promotion of industry, agriculture, medicine, and popular well-being.

II. SOVIET SCIENCE IN THE FIRST YEARS OF REVOLUTION

The great October Socialist Revolution gave new energy and direction to our science. The young land of the Soviets was during its first years in a ring of hostile neighbours and invading States, who had the new technique at their disposal and threatened our country with it. In the economic sense the country was extremely enfeebled by years of war. In these conditions it was particularly important to push ahead the development of science and technique. "In order to win," said Lenin at the height of the Civil War in 1920, "it is essential to understand the whole profound history of the old bourgeois world, and in order to build Communism we must take both technique and science and send them into action for wider circles."

In these difficult years the Soviet Government found opportunities and resources for a radical change in the condition of our science. In 1918 V. I. Lenin himself drafted the outline of a plan of scientific and technical work, according to which the Academy of Sciences was invited to conduct economic and technical research of first-class public importance—like the rational distribution of industry, the electrification of transport, industry and agriculture, and the application of water-power and wind-driven motors.

There came into being, and began to be widely encouraged, a new form of organisation of science—large and well-equipped institutes of scientific research on special subjects. There were soon created in Moscow the Central Aero-Hydro-Dynamic Institute (TSAGI), the Institute of Physics, and the All-Union Electro-Technical Institute (VEI). At Leningrad there was the State Optical Institute (GOI), the Physico-Technical Institute, the Roentgen Institute, the Radium Institute and many others. The

organisation of these considerable institutions, in which hundreds of specialists were to be engaged, presented a very difficult task

First of all, it was people, experts, that were required. The Soviet Republic received very few of them from old Russia. It was urgently essential to train youth, to develop self-instruction and short courses, to send people abroad. These difficulties were overcome. The cadres of trained personnel grew. In branches of knowledge which quite recently had still been a "desert solitude" there appeared well-informed people, with a thorough and original understanding of their subjects. The army of scientists grew from day to day.

In the old Academy of Sciences things also moved in a new way. Where previously, without haste, a specialist Academician would be working in seclusion, there began to appear an ever-increasing number of commencing scientists and students, and the quiet and remote study little by little transformed itself into an institute with laboratories and specialties of various kinds.

Academician N. S. Kurnakov organised the Institute of Physical and Chemical Analysis. The famous laboratory of Academician I. P. Pavlov was transformed into a large and well-equipped Physiological Institute. Academician V. A. Steklov headed the Physico-Mathematical Institute; and so on.

From the very first months of Soviet power there also began to come into being new universities and places of higher education, both in our capital cities and in the distant provinces. Soviet science began to grow, expand, branch out and become complex, just as the young shoots of plants grow under the influence of life-giving rain after a prolonged drought.

With its very first steps Soviet science had sometimes to pass a very serious "State examination". At the direc-

tion of the Soviet Government, and under the guidance of Academicians P. P. Lazarev and I. M. Gubkin, there began, while the Civil War was still raging, and in fact in the very zone of operations, the detailed study of the Kursk magnetic anomaly, which later led to the discovery of vast deposits of iron-ore. In 1920 Academician A. E. Fersman with his colleagues began researches on the Kola peninsula in the Far North. They led to the discovery of most important deposits of apatites and nepheline, which have become the basis of an industry.

On the directions of Lenin a commission of Soviet electrical engineers drew up a great plan for the electrification of the country. This plan embodied the results of vast technical and economic work, and was of great practical importance. Later on, it found its application in the Stalin Five-Year Plans. It was at that time that Stalin characterised the plan of electrification as "a masterly sketch of a genuinely unitary and genuinely State economic plan." He wrote of it as a Marxist attempt, unique in our age, "at introducing under the Soviet super-structure of economically backward Russia a genuinely realistic technical and productive basis, the only one possible in present conditions."

As a result of the intensive activity of the new institutes and of industry, the young Soviet country began to produce its own electrical machinery, its own radio, its electric lamps, its own optical glass and optical instruments. Aircraft construction was perfected on the basis of the remarkable theoretical work of N. E. Zhukovsky and S. A. Chaplygin, and the science and art of the construction of modern motors and railway engines were gradually acquired.

Practical Soviet medicine grew to an uncommon extent, and together with it there also was an expansion of scientific research in the sphere of medicine and biology.

Agricultural science, directed to the task of raising the fertility of the peasants' fields, found its feet and developed on a great scale.

The national policy of Lenin and Stalin faced our linguists with responsible problems. The foundations of a script, together with dictionaries and grammars, were drawn up for many peoples who constitute part of the Soviet Union, and for the first time there began the scientific compilation of the history of these peoples.

But the most important event in the history of our science in these years was that henceforward the public and political life of the country as a whole began to be determined by a scientific theory, the teaching of Marx and Engels concerning the laws of social development, which the genius of Lenin and Stalin developed.

Year by year the character of science in the U.S.S.R. began to change. By means of the school, of oral propaganda, of lectures, books, newspapers and the wireless, science penetrated into the very depths of the people. Very rapidly the army of workers in science grew to almost tenfold what it was before the revolution. Whereas previously science was divorced from practical tasks, and scientists not infrequently were distracted by extremely abstract questions, scientific theory now became organically bound up with the requirements of technique and practice. Science became more accessible, more widespread and approached much more closely to the needs of life than had been the case before.

In pre-revolutionary Russia, when people spoke of science, they always in reality had in view individual scientists like Lomonosov, Lobachevsky or Mendeleev. In Soviet days it has become customary and natural to speak of schools and institutes, of the school of Pavlov, the school of Kurnakov, the TSAGI, the GOI, and so forth, i.e., of considerable collective bodies of scientists.

Yet at the same time this by no means meant the weakening of the role of an outstanding personality, genius, or talent. A brilliant scientist came to be valued even more than before, but he was no longer a solitary figure, as he had been previously, but a teacher and the guide of a scientific school.

Even in its first and particularly difficult years, Soviet science gave much to its people and to the whole world, to "world science" as we usually say. Academician D. S. Rozhrestvensky and Professor A. A. Friedman made very important discoveries bearing on the structure of atoms and the theory of relativity. Academician A. F. Joffe laid the foundations of the modern physics of crystals. At the Pavlov Institute remarkable work on conditioned reflexes continued. Academician N. Y. Marr created a new and revolutionary theory of language.

By the side of these lofty fights of theory, there were truly incalculable results, large and small, but all with practical significance, in the spheres of the search for useful minerals, of chemistry, of electrical technique, of radio, optics, aviation and other branches of technique.

Science generously and without undue delay repaid the people for those better conditions which were granted to it by the victorious revolution.

The special attention which was paid to science by the Bolshevik Party and the Soviet Government during the first steps of the Soviet State, in the severe years of Civil War and insurrection, acquired a decisive significance later, in the years of the Stalin Five-Year Plans and the great Patriotic War. That young generation which had been drawn into scientific research in the first years of the Soviet power grew up to maturity, and in the years of the Patriotic War proved to be the main force determining the development of our science and technique.

III. SOVIET SCIENCE DURING THE STALIN FIVE-YEAR PLANS

In December, 1925, at the Fourteenth Communist Party Congress, Stalin put forward the aim of transforming the Soviet Union from an agrarian into an industrial country. In April, 1929, the first Five-Year Plan for the development of national economy was adopted at the Sixteenth Party Congress.

Throughout the boundless expanses of the Soviet land, a new and immense industry began to grow. Soviet science and technique themselves entered in the planned Socialist economy, upon the path of planning, and were directed to the service of expanding industry, transport and agriculture.

The possibility of planning scientific research at first met with distrust. The approximate argument was as follows: "Science in its very essence aims to discover the unknown; and how can the unknown be planned? Will the result not be the kind of problem which is set in the folk tale: 'Go to the place I don't know, and bring back I don't know what?'" In practice this line of thought is mistaken: it is confuted by all the past of science, and particularly by our Soviet experience.

Scientific research very much resembles a journey through a mountainous district with dizzy peaks, ravines, plateaux and valleys. Sometimes the traveller reaches a sheer wall and really does not know what to do further; he has to climb painfully to the summit. But then from that height vast expanses unfold before him, and he can sometimes draw up a very detailed plan of his further journey for a long period ahead. From height to height a plan of the journey is quite feasible. The heights are those great discoveries which determine for a long time.

ahead the paths by which science is to develop. Such was the theory of natural selection of Darwin, the periodic law of Mendeleev, Pavlov's teaching on conditioned reflexes. One of the very greatest summits of science is the teaching of Marx, Lenin and Stalin.

In technique the possibility of planning is still more evident and reasonable. The constructor of aircraft knows beforehand, and has long known, in what way the average power and speed of future aircraft will grow from year to year. The modern locomotive is the consistent and planned development of the original locomotive of Stephenson.

Together with the economy of the nation, science began to plan its way ahead for quarters, years, and five-year periods. Such a science, developing according to plan, gave very much to the State. It helped in the carrying out of the first Five-Year Plan and the later plans. When setting forth the main aims of the Five-Year Plan, in his report on the results of the first Five-Year Plan, Stalin gave pride of place to the moving of the country "from its backward and sometimes medieval technique on to the rails of modern, present-day technique." In order to give effect to this throughout industry and agriculture, an intensive work of research was required, affecting both the essence of the industry concerned and the details of its technology. Very often such work was not at all the discovery of new commanding heights, but a planned and accurate advance through difficulties which stood in the way of the end desired.

Such planned work was carried on, not only in the large specialised institutes and in works laboratories, but also in the central scientific institutions, at the Academy of Sciences, at the universities and colleges. Along the avenues of planned science our scientists, engineers and

technicians gradually made their advance in all sectors of a vast and very varied scientific and technical front.

Not so long since, we had very many "blank spaces" in many scientific departments. Planned science in the years of the Five-Year Plans has filled these blanks and helped to train up expert specialists, in spheres in which quite recently we still had neither men nor traditions.

In addition, and in close connection with this vast but at first glance not easily noticeable scientific work, there also went on along the whole front the "conquest of the heights."

Our science may be proud of many remarkable pieces of scientific work during the Five-Year Plans, opening up broad experimental and technical horizons, frequently of world importance. Here are some examples out of the realm of physics—a science which developed most energetically during these years, both in our country and abroad.

D. V. Skobeltsyn applied a new method for the study of cosmic rays and of the processes of disintegration of atomic nuclei, by placing the so-called Wilson chamber in strong magnetic field. With the help of such a method he for the first time proved—one may say, gave visible proof of—the very existence of cosmic rays, determined the energy of the particles composing them and discovered a new phenomenon, the "showers" of the particles. Skobeltsyn's method, taken up in all countries, made possible a number of important discoveries. With its help there were discovered abroad positive electrons, new elementary particles without an electrical charge, which form part of the atomic nucleus and have been called neutrons.

The Moscow physicists L. I. Mandelstam and G. S. Landsberg, simultaneously with the Indian research

worker Raman at Calcutta, discovered a new most important optical phenomenon, the so-called "combinational diffusion of light". Its essence is that the quality, or spectrum, of the diffused light turns out to be altered, by comparison with falling rays, in consequence of the oscillations of the atoms in the molecules of matter. This phenomenon has become of very great significance for understanding the nature of light and likewise the nature of matter. At the same time it has opened up secret places in the internal structure of molecules. The significance of the discovery can be judged, for example, from the fact that during the seventeen years which have passed since it was published, several thousand works have appeared in all countries which apply and develop it further.

At the present time this "combinational diffusion" is passing further and further into practice in laboratories and factories for purposes of analysis of organic compounds, in particular of various derivatives of oil, for the analysis of benzine and other materials.

P. L. Kapitza built an ingenious and very productive machine for the liquefaction of helium gas, which is a process of extreme difficulty. Working with liquid helium he discovered in it under certain conditions, near a temperature of absolute zero, quite a new quality of super-fluidity, an almost complete absence of viscosity. This is an unheard-of-thing, which has set a big problem for theory, and points to a new and previously unknown quality of matter at low temperatures.

V. A. Fok has solved a very difficult problem of how to calculate the structure of complex atoms such as that of sodium. On the basis of this method it has become possible quantitatively to calculate in advance the characteristics of complex atoms, in the same way as

astronomers have been doing since the days of Newton in respect of complex planetary systems.

A young physicist, P. A. Cherenkov, discovered a new optical phenomenon. If any simple liquid—water, sulphuric acid, glycerine, etc.—be illuminated with gamma or beta rays proceeding from radium, there arises a scarcely visible luminescence, which possesses astonishing qualities. It is directed only forward, along a cone, is almost equal in vividness for any liquid and has other unusual peculiarities. It became possible to ascertain that this was a new page in the theory of light; a case in which electrons move within matter with a speed exceeding that of light.

Two other young physicists, Petrzhak and Flerov, discovered the remarkable fact of the spontaneous disintegration of the nuclei of the uranium atom.

New and important results were also achieved during the years of the Five-Year Plans in the application of physics to technical problems.

Quite new fields in radio technique were opened up by the work of L. I. Mandelstam, N. D. Papaleksi, A. A. Andronov and others on "non-linear fluctuations" (these fluctuations are mathematically described by non-linear equations). In a long-familiar sphere of phenomena, one that seemed thoroughly studied (for example, even in a simple electric bell), more precise mathematical analysis revealed new features. Radio technique in its theoretical aspect thereby was rising to a higher level than before. The new theory provided new practical conclusions also. Thus, electrical machines were built on a new principle, and new methods of fighting radio interference were proposed.

Another interesting step in radio technique, which we owe to the same persons and to their school, is the construction of a radio range-finder, i.e., an apparatus which

makes it possible with the help of radio waves to determine with great exactness a distance of a hundred on more kilo-metres. This method has proved very useful for exact geodetic surveying at sea.

P. L. Kapitza, whose name has already been mentioned in connection with work on the super-fluidity of liquid helium, has built a new and powerful machine for producing liquid air on the turbine principle. This machine has great advantages over those which previously existed, and has become the basis of a new technique in refrigeration.

V. P. Linnik has worked out the application of optical interference phenomena for delicate calculations and extremely sensitive inspection of the quality of polished surfaces. He built several pieces of apparatus for this purpose, which have become widely known and applied in the U.S.S.R. and beyond its borders.

Many new discoveries have been made by the Soviet physicists L. A. Kubetsky, V. V. Timofeyev and others in the sphere of so-called electron-optical phenomena, which are beginning to find many varied applications in different technical spheres (sound film, television, some war equipment, etc.).

Among the mathematical works which have been produced in the U.S.S.R. during the Five-Year Plans, the researches of I. M. Vinogradov in the theory of numbers have had a wide echo. This theory is a sphere of mathematics in which our country has always occupied one of the foremost places. I. M. Vinogradov not only solved some problems in the theory of numbers which had seemed insoluble for centuries, but developed a potent analytical method the application of which may bring new and fruitful results.

Soviet chemists brought up in the scientific schools of A. E. Favorsky, S. V. Lebedev and N. D. Zelinsky have

provided the theoretical and technological foundations for developing the production of synthetic rubber, for the synthesis of polymerising compounds (plastics), for artificial motor fuel and for the manufacture of a number of important organic products.

Many valuable results in the sphere of new metallic alloys have been achieved by the scientific school of N. S. Kurnakov.

The works of P. A. Rebinder and his school have opened up very substantial practical prospects in the study of the influence of superficially active substances on various mechanical processes (such as the sinking of boreholes in geological prospecting).

Over the vast area of the U. S. S. R. Soviet geologists continued their systematic study of its natural resources. Oil geology, which for a number of years was directed by I. M. Gubkin, was greatly developed. Considerable new oil deposits were discovered, particularly the so-called Second Baku which is already producing millions of tons of good oil.

Among Soviet geographical discoveries of those years particular mention must be made of the Polar expeditions, which had as their object to give effect to Lomonosov's old dream of a great Northern Sea Route. The flight to the North Pole which was directed by O. Y. Schmidt, and the famous drift on the ice-floe carried out by I. D. Papanin and his colleagues, will always remain one of the glorious pages of Soviet and world science.

Intensive study was made of the physics of the globe, its atmosphere, seas and oceans and hard crust. The daring flight of Soviet stratonauts, the study of the upper layers of the atmosphere by sounding balloons, with the help of stratosphere balloons and during alpine expeditions, have provided new and important material concerning the physics of the stratospheric flight by aircraft.

An original path was followed by research into the physics of the hydrosphere in the work of V. V. Shuleikin and his pupils. It has led to the creation of an essentially new branch of science, with a number of important theoretical and practical results.

The hard crust of the earth, and particularly earthquakes, continued to be systematically and widely studied by the school of B. B. Golitsyn, under the guidance of his pupil P. M. Nikiforov

Science has become immense. I must limit myself to the examples I have quoted, although many important results were achieved during the Five-Year Plans in biology, in medicine, in agriculture, in history, in the science of language, in economics, in theoretical law and particularly in technique. The arbitrary selection of examples principally from the sphere of the physical sciences was determined, of course, by the special subject of the present author.

The unitary philosophy of dialectical materialism has year by year united Soviet science ever more strongly in all its branches.

Idealistic tendencies and the relics of metaphysical materialism which have penetrated our science from time to time always encountered acute criticism and resistance. Dialectical materialism gradually was mastered and understood more clearly in all its profoundness and breadth, and was successfully applied to concrete materials in various branches of knowledge

The new social conditions created by the victorious revolution also determined to a very high degree the particular features of Soviet science. In its best expressions it became a science which, to use the words of Stalin in 1938, "does not shut itself away from the people, does not hold itself aloof from the people, but is already to serve the people" It was a science "the men of which

know the power and importance of established traditions in science and skilfully make use of them in the interests of science yet nevertheless will not be slaves of those traditions and have the courage and resolution to break old traditions " At the same time it was a science in which new tracks "are being laid down, sometimes by persons not generally known to science, even quite unknown in the scientific world, by simple people, practical men and women, innovators in the course of experience "

IV. SOVIET SCIENCE AND THE GREAT PATRIOTIC WAR

The great Patriotic War of the Soviet Union brought our science face to face with new tasks

Many young scientists exchanged their microscopes, telescopes, reports and books for the rifle and the greatcoat and went to the front. Many of them gave their lives in defence of their people and their culture. Others remained in their laboratories and institutes, continuing their scientific work almost in view of the enemy.

The history of Soviet science will not forget those scientists of Leningrad who for over two years, under air bombing and artillery fire, in conditions of hunger, cold and unprecedented privation, continued their scientific work, read lectures, worked in hospitals and wrote books. They gave their strength to the uttermost to aid the soldiers who were defending their native city. Physicists repaired artillery range-finders, helped to camouflage the city and the ships of the Baltic Fleet and solved new problems connected with the necessity of establishing communications with the "mainland" over the ice of Lake Ladoga. Botanists helped to produce vitamins from plants to save the people from scurvy. Doctors sought out new methods of fighting dystrophia (exhaustion from hunger)

The main forces of Soviet science were drawn off deep into the rear. They were evacuated beyond the Volga, to the Urals and Siberia. Institutes of the Academy of Sciences were at Kazan, Sverdlovsk, Frunze, Tashkent, Alma-Ata and other Soviet towns. The Ukrainian Academy of Sciences took up its abode at Ufa. Deep in the rear also were set up again the specialised institutes—the State Optical Institute at Yoshkar-Ola, the All-Union Electro-Technical Institute at Sverdlovsk and so forth.

The institutes, like industry itself, were evacuated so that they might mobilise themselves to the maximum and give still greater assistance to the Red Army.

Our science had to go through a most difficult test. In unaccustomed and frequently inconvenient conditions, in buildings unadapted for the purpose, often with inadequate equipment and in the absence of many essential materials and pieces of apparatus, without new books and without their accustomed staff, who had gone to the front, our scientific workers had to solve urgently problems thrust upon them by the war. And these problems were sometimes more difficult than those which had been solved in peacetime.

Now that the war is over one can say with satisfaction that Soviet scientists passed that severe test; they helped the front and facilitated its work in many ways.

The demands made of science were endless and varied.

Care had to be taken of the health of the soldier and the life of the wounded had to be saved. Our medicine did much in this direction. Over 70 per cent of the wounded recovered and returned to the front. The death rate in the hospitals was but a fraction of that which prevailed in the First World War. By timely attention to wounds they learned how to prevent infection dangerous to life. Substantial successes were

achieved by new methods of treating wounded limbs (envelopment in plaster) and chest wounds. They learned to save injured eyes in a number of cases by transplantation of tissue. Very great importance was acquired in medical practice by transfusion of blood, which had been of course developed before the war but continued to be perfected. Methods were discovered of curing frozen limbs. Deficient drugs were required in vast quantities. Methods were hastily discovered and brought to their technological conclusion for the manufacture of the various sulphonamides, penicillin and other preparations.

Naturally the front presented complex and ever-growing demands in respect of all forms of armament. Soviet technique and inventive talent achieved great results in this respect. New heavy howitzers, models of new guns, anti-aircraft artillery, new naval artillery equipment, reactive weapons, new mortars, various types of automatic weapons, anti-tank guns, armour-piercing shells against the German "Ferdinands" and "Tigers"—all this was created anew in wartime by Soviet engineers working together with industry.

Soviet tanks which broke a way through for the offensive of our troops were the result of the work of our metallurgists and of the creative thought of our constructors like A. A. Morozov, J. Y. Kotin and others.

Soviet aircraft production, which expanded beyond all comparison, both qualitatively and quantitatively, during the war years was a particularly clear sign of technical progress. The machines designed by A. S. Yakovlev, S. A. Lavochkin, S. V. Ilyushin, A. N. Tupolev, V. M. Petlyakov, N. N. Polikarpov, and the aircraft engines of A. A. Mikulin, A. D. Shvetsov and V. Y. Klimov determined in many respects the strength of the Red Army. This aircraft development took place as a result of the very great and sometimes very abstract scientific work of

the old and new generations of our aero-dynamists and engineers, from N. E. Zhukovsky to S. A. Chaplygin, B. N. Yuriev, S. A. Khristianovich and others. At this point broad "university" science was unbreakably interwoven with basic military technique.

Naval construction was improved and new types of warships and naval armaments were created. In naval science we had a long tradition, the art and skill in the theory and practice of ship-building, such as that of A. N. Krylov, combined with the knowledge and ability of young engineers and constructors.

Quite special importance in the war just over devolved upon radio, on the one hand as an all-powerful method of communication, and on the other as an uncommonly effective means for discovering aircraft and other military objectives and determining their distance (radio-location). Soviet radio technique during the war introduced much that was new on its own account in this sphere by the work of Y. B. Kobzarev, A. I. Berg, B. A. Vvedensky, N. D. Papaleksi, A. L. Mintz and many other physicists and engineers.

All the main kinds of modern armaments without exception are linked with perfected and complex optics. In artillery, range-finders, panoramas, and stereo-telescopes are required; aircraft have bomb-aiming apparatus and very complex photographic lenses for aerial photography; tanks and even rifles are equipped with telescopic sights, the submarine has the periscope as one of its basic parts; and field glasses are the essential equipment of an officer. Soviet optics, in the person of its scientists, engineers and skilled workmen, honourably did its duty to the country.

During the war the Red Army never complained of its optical equipment, which it had in good quality and adequate quantity. Aircraft lenses of a new type, success-

fully applied in operations, range-finders, periscopes, telescopic sights and other optical equipment were invented, constructed and manufactured in the heart of the Mari forests by the State Optical Institute and at numerous factories of the optical industry.

Very varied demands were made of Soviet chemistry by the front and by industry. It responded to them rapidly and well. Our chemists found new methods for the production of acetone, various spirits, plastics used for transparent armament and windows in planes and tanks. Continuous work was carried on for the preparation of good (high-octane) aviation spirit. New methods of refining benzine and other oil products were discovered. Naturally a tremendous work fell to the lot of chemists engaged in the discovery of new explosives and their technology.

The war obliged us to intensify our search for, and application of, useful minerals and other natural wealth of our country. New and important deposits of coal, oil and gas were discovered, one consequence of these discoveries in particular was the re-equipment of the industry of Saratov for the use of Yelshansk (natural) gas. The supplies of this gas are so great that Moscow will shortly be making use of it, thanks to the Saratov-Moscow gas pipeline.

Much was done to ascertain the resources of the Urals by the work of a special commission headed by the then President of the Academy of Sciences, the late V. L. Komarov. Other and similar commissions worked in the Karaganda coalfield (headed by A. A. Skochinsky) and in the Volga region (E. A. Chudakov).

It is difficult to estimate at its due value the help afforded to the country in wartime by the agricultural and biological sciences, and by all who had experience and

knowledge in this sphere, from academicians to experienced and observant collective farmers.

As yet all the work done during the war is far from being summed up. It is not possible to examine and evaluate fully the assistance given to the front by Soviet science and technique. One thing is clear—that assistance was everywhere, beginning with the health of the individual soldier, the soldier's felt boots which the physico-chemists endeavoured to make waterproof during the spring thaws, to new varieties of anti-tank guns and radio-location.

The high value set upon Soviet science by the Party and the Government during the course of the war itself was expressed in numerous Stalin Prizes awarded for the best scientific and technical achievements, and in that triumph of our science which found its expression in the 220th Jubilee of the Academy of Sciences of the U.S.S.R. in June, 1945, during the great days of victory.

In the difficult months of the war, during the spring of 1942, Stalin sent two telegrams to the Academy of Sciences. "I express my confidence," said Stalin to the President of the Academy, "that, in spite of the difficult conditions of wartime, the scientific activity of the Academy will develop in step with the increased requirements of the country."

In the second telegram Stalin wrote: "I trust that the Academy of Sciences of the U.S.S.R. will take its place at the head of the innovators in the sphere of science and production, and will become a centre of foremost Soviet science in the struggle which has developed with German Fascism, the worst enemy of our people and of all other freedom-loving peoples."

The science created by the Revolution in the Soviet Academies, universities, specialised institutes, at the fac-

tories and in the fields and hospitals, justified these expectations. It did in fact develop and mobilise itself in step with the increased requirements of the country and the front. The cultural sowing of the great October Socialist Revolution bore its fruit at the time when it was most urgently needed.

V. AT THE BEGINNING OF A NEW EPOCH

The great Patriotic War culminated in a victory the dimensions and significance of which it is as yet difficult to estimate fully. The victory was won by our just cause, by the strength and patience of our people, by the genius of Stalin's leadership, by the valour and skill of the Red Army, and by our new culture with its original thought, science, and technique.

Our country and the whole world stand at present at the threshold of a new epoch. We have before us a vast effort to restore our towns and villages which were attacked, destroyed and plundered by the enemy. The fourth Five-Year Plan for the years 1946-50, recently published, is a plan for the restoration and development on a wide scale of industry, agriculture and transport. Its fulfilment will require the participation of science on a great scale. Our science will have to pass on from the military tasks of the recent past to the varied problems of Socialist construction.

The Presidium of the Academy of Sciences of the U.S.S.R. recently completed the examination of the five-year plans of its Sections which unite over 120 research institutes. Particular stress in the whole programme is laid on physics, chemistry and the technical sciences.

Physicists will continue to study the properties of matter at temperatures close to absolute zero and the high-speed aero-dynamic processes, which are of great importance for

the development of aviation at supersonic speeds, of artillery and of other branches of engineering.

Geologists and geographers are concentrating their attention on problems relating to the Pacific Coast areas, to iron and oil deposits and to the further development of geological prognoses. A soil map and geography of the Soviet Union in many volumes will be published. Biologists will continue their studies connected with the ideas of their Russian predecessors. A number of institutes will participate in studying the structure and synthesis of proteins.

Among the problems faced by the technological Section mention should be made of the development of the theory of stability of movement and oscillation of mechanical systems, problems of the strength and steadiness of structures, problems of aero-hydro-mechanics and the development of work in the field of transmission of high-tension current.

The economy of those regions which suffered from German occupation is to be reconstructed in its entirety. But we do not intend merely to reproduce what existed before the war. To the building of new towns, new factories and new houses we shall apply our new technical resources. We have in mind the use of new building methods, new materials, new designs, new ways of lighting and heating.

The lighting of the new buildings will be radically improved. We shall be bringing fluorescent lamps into general use, which are three or four times more economical than ordinary incandescent electric lamps, and provide a light similar to daylight. The U.S.A. turns out millions of them a year. Designs suitable for manufacture in the U.S.S.R. were approved some years ago, but the war prevented us from launching their production on a large

scale. Now we can proceed with our plans. We hope to use the same lamp for street lighting, but some research will be necessary to find a type which will give satisfactory service in our winter conditions.

Problems of fuel and energy will be re-examined. Leaving on one side problems connected with the utilisation of atomic energy, which have become quite realistic since the discovery of the atomic bomb, and which give promise of an unprecedented technical revolution, we can point to fields less pretentious but of great practical importance which will repay investigation.

Gasification is one such field in which Soviet scientists are already very much at home. We shall interest ourselves in finding uses for low-calorie-content waste industrial gases, and in the development of artificial fuel and helio-technique. The main thermo-technical problem of the practical possibility of using steam under high pressure, and at high temperatures, for the purpose of creating most efficient thermic machines, is as important as ever.

There are innumerable new technical processes and devices which it will pay us to apply in industry. Modern physics, chemistry and electrical technique suggest methods which can be applied in industry to enormous advantage, and which may indeed revolutionise industrial processes.

From the apparently insignificant fact of radio-activity, discovered half a century ago, emerges the atomic bomb. Spectrum analysis, discovered in the second half of the nineteenth century and long applied only in astronomy, has become, as I mentioned earlier, one of the most convenient methods of analysis in various branches of industry.

The manufacture of cyclotrons and similar apparatus is being developed in the U.S.S.R.

The reconstruction and further development of Soviet agriculture face our agronomists and biologists with great problems of genetics, selection and agricultural chemistry. The experience of the war points the way to tremendous advances in the fields of medicine and public health. Our geologists will be fully occupied in finding new sources of building material and of raw materials for industry and agriculture. Geophysical, electric, magnetic, seismic, and other methods of survey will be extended.

The Academy's institutes will organise many scientific expeditions. In 1946 alone, over 60 expeditions will be sent out. The council for the study of the country's productive forces, headed by the prominent geologist Lev Shevyakov, will conduct large-scale prospecting in the northern Caucasus, Azerbaijan and the Urals. Geological expeditions will be sent to Central Asia, Eastern Siberia and the Far East.

Our planned economy continues to require the highest possible degree of accuracy in short-term and long-term weather forecasts. This need will provide a powerful stimulus in the realm of geophysics.

The chief astronomical observatory at Pulkovo and the Astro-Physical Observatory at Simeiz in the Crimea, which were destroyed by the Germans, are now being restored, as well as the Sevastopol Hydro-Biological Station, the Hydro-Physical Observatory of the Academy of Sciences, and several other scientific institutions.

The provision of the material basis for scientific work is an essential condition for the fulfilment of the plan of research. In the period up to 1950, over 50 large buildings will be constructed, including the main building of the Academy of Sciences and over ten new institute buildings. The main botanical garden of the Academy is being laid out in the suburbs of Moscow, over an area of 1,250 acres.

During the next five years, the Academy will considerably extend the training of scientific staff, particularly in the field of physics, chemistry and technology. At present the U.S.S.R. counts over 7,000 persons holding doctor's degree. Before 1950 the Academies of Sciences will enrol over 3,000 post-graduates, including over 500 this year.

But in assisting the realisation of the new Five-Year Plan, we shall not restrict ourselves to the natural sciences. The humanities, too, will play a considerable role, while the importance of the economic sciences is obvious at the most casual glance. The study of the history of the peoples of the Soviet Union, of their literature, folk-lore and ethnography will proceed vigorously.

Many great changes have taken place in the world in the flames of war. But I should like in conclusion to dwell on two very important tendencies, the realisation of which has always inspired the best Russian scientists, I mean the increasing of the part played by science and by democracy in the life of the peoples.

Of course Fascism has not yet been fully rooted out; its adherents are still hiding in various corners, seeking for the time being to remain unnoticed. A great work still lies ahead, one of cleansing the earth of this foulness, of completely routing the Fascist ideology. Nevertheless in many countries a new, free, democratic breeze has begun to blow, bringing the promise of happier times for exhausted humanity

Science and technique have now acquired unheard-of importance for the whole human race. During the war years technique has changed and grown amazingly before our very eyes, solving problems which previously seemed unrealisable and simply fantastic. These amazing successes speak with one voice of one conclusion—the almost boundless power of human communities, capable—with

due effort and attention—of solving any scientific and technical problems.

But science will only serve progress when it is combined with democracy. Science is an all-powerful but two-edged weapon which, according to the hands in which it is held, may serve either for the happiness and welfare of mankind or for its destruction. In the hands of the arrogant Hitlerite bandits, science was becoming a weapon for the enslavement and destruction of the world. Our consistent Soviet democracy fully guarantees the use of science in the interests of all mankind, in the interests of peace and progress.

The scientists and scholars of the Soviet Union, our academies, universities, institutes and laboratories find themselves faced with a new task, incomparably more important than in all preceding times. Our science requires in the shortest possible time to place at the disposal of the Soviet people, of its towns, its industry, its fields, such scientific results, such resources of technique, as will permit the continuation of the great work of building a socialist society with the maximum use of our natural resources, and at the same time, with complete tranquillity and confidence that no-one will dare to interfere with our creative work.

SUMMARY OF THE 1946 SESSION OF THE ACADEMY OF SCIENCES OF THE U.S.S.R.

In the course of preparing this article we received the following information on the meeting of the session of the Academy of Sciences of the U.S.S.R., held in Moscow from July 1-5, 1946

ON the opening day of the session the President, S. I. Vavilov, presented the Academy's five-year plan which provided for research into 697 problems. The plan had taken six months to draft, and scientists at all the Academy's institutes and departments had joined in the preliminary discussions.

"A large part of the programme," Vavilov said, "is allotted to problems of the philosophy of the modern natural sciences. Mathematics, a direct adjunct to these problems, will be called upon to help the other sciences in solving their problems

In 1946, the age of atomic energy, radar, rocket propulsion, and telemechanics, it is hardly necessary to explain the emphasis laid on physics in our five-year programme," he added. Soviet scientists would continue their investigations into the structure of matter, the problem of elementary particles, the structure of the atomic nucleus, crystals and fluids. Particular attention would be paid to problems relating to atomic energy and cosmic rays.

Turning to chemical problems, Vavilov emphasised that in some most important fields modern chemistry merged into physics. He stressed the importance of photochemistry, electrochemistry and problems of colloid chemistry. Big tasks faced specialists in organic chemistry.

A large share in the programme of biological research was allotted to research into the nature of albumen, and into the chemico-physical principles of the vital processes.

Further, the president described the work to be done in the field of astronomy, much equipment still had to be replaced, as the Germans had looted or destroyed many observatories. Geophysicists, geologists and geographers would study the mechanics of earthquakes, and develop new geophysical methods of geological prospecting.

During the next five years scientists would study problems of mechanics, of the stability of motion and the theory of oscillations, aero-hydro-dynamics and gas dynamics. The plan provided for research into the general theory of mechanics and machines, of the durability of machines and their parts, and problems of friction and wear, as well as research in the field of super-high frequency waves.

In conclusion, Vavilov dwelt on the work to be done by historians, linguists, economists and students of law.

Reference was also made to the large sums allocated by the Government for the construction of scientific institutions and their equipment. Academicians urged increased training of new scientists and further improvement in the knowledge of institute and laboratory personnel.

After a number of additional suggestions had been made, the Academy's five-year plan was unanimously approved.

A. P. Zhdanov read a report on his recent discovery of a new type of fission of atomic nuclei caused by cosmic rays. This was a very rare phenomenon, he said. At sea level only five or six fissions per square centimetre of a thick-layer photo-plate occurred per month. The number of fissions increased rapidly at greater heights. For instance, at 21,000ft the number was fifty times greater than at sea level.

Towards the end of 1942, he said, he had observed a sharp increase in the number of fissions produced by cosmic rays. This was apparently due to a considerable in-

crease in the stream of cosmic rays, resulting from some catastrophe in space. It was while making these observations that he had discovered the complete fission of the atom nucleus into all its component parts, protons, mesotrons and neutrons.

At a later session Pyotr Rebinder read a paper on his method of speeding up the deformation of solid bodies. Rebinder is a specialist in this sphere. His book, "Drilling Hardness Reducers," is well-known to foreign technicians.

He has proved that the addition of small quantities of certain chemicals facilitates a change in the dimensions and shape of solid bodies. The molecules of these chemicals, often called "hardness reducers," penetrate into the solid bodies and make them friable. Thus the speed of drilling in hard rock increases by 50 and more per cent. if certain salts or lubricants are added to the wash-water.

Rebinder's methods are widely used by Soviet oil and mining engineers and geological prospectors.

Papers on biological achievements were read by Vladimir Sukhachev, by Nikola Gamaleya (on factors of variability of bacteria), by Lena Stern (on the role of the central nervous system in regulating physiological processes), by Professor Nikolai Krasilnikov (on antibiotic properties of bacteria) and by Nikolai Burdenko (on the action of antibiotics on the carotid).

Members of the Academy's department of physical sciences heard two papers, one by Bogolyubov of the Ukrainian Academy, on "the theory of superfluidity" and the other by Professor Antonov-Romanovsky on "the post-luminescence of phosphorus crystals."

Achievements in the technical sciences were outlined by Alexander Mikulin, who read a paper on rocket propulsion engines, by Nikolai Andreyev, speaking on piezo-electric crystals, and by Nicolai Kobrinsky and Leonid Lyusternik on "contemporary calculating technique."

OUTLINE OF THE HISTORY OF THE ACADEMY OF SCIENCES

*From a speech of the late Academician V L. Komarov,
President of the Academy of Sciences of the U S S R, at
the Jubilee Session of the Academy, June 16, 1945.*

I want to devote my speech to the question of the connection between science and life, and to recall some pages in the history of the Academy of Sciences, now more than two centuries old, which will help us to understand this question.

Looking back, I clearly see three periods in the history of our Academy. The first period is linked with the names of Peter the First and Lomonosov the 18th century. The second period covers the scientific activity of a number of the greatest astronomers, mathematicians, physicists, chemists, geologists, historians, philologists, and other specialists of the 19th and the beginning of the present centuries. The third period began over 25 years ago, when the Academy of Sciences turned its energy to the satisfaction in every possible way of the needs of Socialist construction. This was the period in which the Academy of Sciences was working on the lines broadly laid down by Lenin and Stalin.

The Academy of Sciences was the work of the hands of Peter the First. Reading now through the first documents in which is mentioned the "society of sciences" i.e., our Academy, you see how much attention Peter devoted to his child, how closely is bound up the institution of the Academy of Sciences at Petersburg with Peter's reforms, with the cultural and industrial rise of our State in the first quarter of the 18th century. During the whole of 1724, Peter was actively inviting learned men into the new Academy, concerning himself with creating conditions for

their work and formulating the tasks facing Russian science and its public centre. These tasks followed from the practical requirements of the time. Creating an army and a navy, building shipyards, mines, manufactures and commercial centres, Peter demanded a large-scale study of the natural resources of the country, necessary for Russian industry and trade. To study the contours of Russia, her surface, her rivers and lakes, her vegetable and animal world, her mineral resources and her soil, her towns and economy, the languages of her peoples, were the first tasks of Russian science. Hence follows the outstanding importance of the Russian academic expeditions of the 18th century.* The study of Russia and the composition of Russian maps, in their turn, required geodetic and astronomical observations, and therefore brought into the foreground astronomical and mathematical research. Yet, when planting in Russia a new centre of science, Peter looked very far ahead. He foresaw that Russia would one day become a country of the most advanced science. One of his contemporaries relates that in a speech addressed "to various venerable Russian personages" Peter compared the migration of scientific centres with the circulation of the blood in the human body, and asserted that, just as ancient Greece was "the abode of all the sciences," so one day Russia would become a State distinguished by the particularly rapid development of all branches of knowledge.

The seeds of scientific development were cast by Peter upon prepared soil, and very soon they gave their shoots. Only a few years after the foundation of the Petersburg Academy of Sciences, it was reckoned to be one of the most important scientific centres of Europe. The well-

* In 1725 Peter I sent a scientific expedition to Kamchatka, to ascertain whether the Asiatic and American continents were connected — *Editor*.

known physicist Bullfinger, one of the first Petersburg academicians, said in 1781. "Whoever wishes fundamentally to study the natural and mathematical sciences must set out for Paris, London and Petersburg. There are learned men in all branches, and store of instruments. Peter, himself acquainted with those sciences, was able to gather all that was requisite for them. He has collected an excellent store of books, costly instruments, overseas rarities of nature, works of art, in short all that has been recognised by men with knowledge as meriting respect."

During the reigns of the successors of Peter the First and Catherine the First, in the years of the Biron tyranny and later, not a few obstacles arose in the way of Russian science. Still, it broke them down. In the person of Lomonosov young Russian science rose to the peak of world natural science. Lomonosov's struggle against obsolete views on physics and chemistry, his anticipation of the modern atomic theory, his idea of development, his principles of the conservation of matter and energy, all go to constitute one of the most brilliant pages in the history of science

The first period of existence of our Academy of Sciences is so closely bound up with the history, content and results of the activity of Lomonosov that it may justly be called the Lomonosov period.

What then are the most characteristic features of this Lomonosov period in the history of the Academy of Sciences? Above all, it is the encyclopaedic character of scientific work. In all the variety of spheres in which the academicians were active they strove for the rational explanation of facts. Human reason, liberated from medieval scholasticism, would not recognise any external authority. For natural science at that time this meant an attempt to give a mechanical explana-

tion of nature. If we turn over the pages of academic journals in the middle of the 18th century, we shall see how many bold mechanical hypotheses were put forward by the Petersburg academicians to explain gravitation, heat, electricity and even biological phenomena. In very truth, the 18th century was the age of reason—reason which broke down every obstacle, and which sought to explain everything in nature in rational fashion. Reason was to explain everything; otherwise it did not fulfil its main task of liberating human thought from the fetters of old traditions. Hence it was that the mechanical natural science of the 18th century found itself so closely bound up with the encyclopaedism of its founders.

In Russia the most many-sided thinker of the Lomonosov period was Lomonosov himself. In addition to the general reasons for this, nature in Russia herself, and the requirements of Russian life, compelled a universal embracing of all branches of knowledge. Russia comprises such varied climatic and botanical zones, she is so diverse in her geology, her geography and ethnography, that nature itself imposed an encyclopaedic outlook upon her investigators. But the nature of Russia had always been manifold: why then did it present this demand only in the 18th century? At that time the practical requirements of this vast country were giving rise to diversified scientific problems. Take for example the Arctic researches of Lomonosov. They followed from the essential economic and technical requirements of Russia. They included an historical analysis of voyages across the Northern Arctic Ocean, economic and demographical calculations, geological and geophysical hypotheses, researches and hypotheses connected with the theory of heat, physico-chemical experiments, researches in the sphere of atmospheric electricity (the Northern Lights) and much else.

I want to mention one other particular feature of the life of the Academy of Sciences in the 18th century. At that time the Academy was not a scientific centre in the modern sense. It was not surrounded by a periphery of many other scientific institutions. The encyclopaedic activity of the first academicians did not necessitate a division of labour between a large number of specialised scientific institutions. It was in the following period that the situation changed radically.

If the 18th century was the period of the encyclopaedists, a period of struggle for a rational outlook on the world, the 19th century was the age of positive achievements in the various branches of science. This difference was well formulated on one occasion by Timiryazev. In 1886 European science was celebrating the centenary of the birth of the great French chemist, Chevreul, who, born in the 18th century, became one of the greatest scientists of the nineteenth. In his address to Chevreul Timiryazev said: "A child of the age of reason, you became the living embodiment of the age of science."

And truly, in the 19th century, science, which had become differentiated, accumulated vast stores of knowledge in all spheres, and this left a tangible impression on all sides of the life of men. The differentiation of science was the pre-requisite of its progress. For the 19th century, therefore, the separating-out and formation of new branches of science is particularly characteristic. In our Academy in the 19th century there arose many new branches of science. Among the large number of new studies very many were the result of the activity of Russian academicians. However, the total contribution of Russian scientists of the 19th century to world knowledge was greater than the contribution of

the Academy. Russian science was already developing outside the walls of the Academy—developing widely and bearing notable fruit. In the 19th century, on at least two occasions, a big social advance became the point of departure for the flowering of natural science. In the first half of the century the Patriotic War of 1812, the awakening of Russian society and the movement of the Decembrists gave such an impetus to the Russian scientific genius as raised Russian scientists to the peak of world scientific thought. In the second half of the century, the sixties and the following years were marked by the activity of an entire constellation of great Russian naturalists, among whom Mendeleyev, Mechnikov, and Sechenov were thinkers of world significance.

At this time the Academy of Science shone by its work in all fields of knowledge, and continued to be one of the main centres of world scientific thought. Such mathematicians as Chebyshev and Ostrogradsky, such chemists as Butlerov, creator of a structural theory of organic compounds, made the Academy famous. But in the 19th century science in Russia, as I said, developed outside the Academy as well. A number of the greatest and most advanced scientists did not find their way into the Academy. The most daring innovator in mathematics, Lobachevsky, was not recognised by academic science. One of the greatest chemists of the last century, Mendeleyev, was not an academician owing to the resistance of the "German group." The latter was headed by reactionaries who deliberately prevented the penetration into the Academy of men connected with the Russian people. The greatest Russian biologists Timiryazev, Sechenov, and Mechnikov, the physicists Stoletov and Lebedev, were also never academicians. A number of the best representatives of scientific thought, men of

whom our people are proud, remained outside the walls of the Academy.

However, on the threshold between the 19th and 20th centuries the Russian Academy of Sciences was a source from which sprang such noteworthy currents in present-day science as evolutionary embryology, the theory of conditioned reflexes, geochemistry, etc. The names of Kovalevsky, Pavlov, Karpinsky, Vernadsky are those of classics of modern natural science. In the sphere of the humanities, the Academy became famous for the remarkable works of Marr, creator of the most modern theory of language, for researches into the history and philology of the Slav peoples, and for the profound and brilliant historical investigations of Solovyov and Klyuchevsky . .

If we compare the present, third period in the history of the Academy of Sciences† with its predecessors, we shall see that the most characteristic feature of creative scientific work in our days is neither the encyclopaedism of the eighteenth century nor the differentiation of the nineteenth, but combination in the working out of scientific problems. Great problems of the present day are solved by the joint effort of learned specialists in varied fields. That is why the association of scientists, and their coming together on a scale covering the whole State, are

* In 1903, Maxim Gorky was struck out of the list of Honorary Members of the Academy by Nicholas II. for his Socialist activities, and the writers Chekhov and Korolenko resigned their honorary membership in protest—*Editor*.

† In 1917 its name was changed from "Imperial Academy," to "Russian Academy," and for the first time in its history it elected its own President—A. P. Karpinsky—instead of having him appointed by the Tsar. In 1925 its title became "Academy of Sciences of the U.S.S.R."—*Editor*.

so important. It is our Academy of Sciences which has become the centre for bringing them together.*

The years of war have been a test imposed by history upon the scientific capacity of the Academy of Sciences of the U.S.S.R. May I dwell for a moment on the work done by the Academy of Sciences in these years? You know that one of the premises of victory was the successful development of Soviet industry in the East. The Urals held a special place in the war industry of the Soviet Union. The Urals are a land most rich in iron, non-ferrous and light metals, fuel and chemical resources. This backbone, spread out along the meridian, parallel to the front and from one to two thousand kilometres distant from it, forms as it were mighty line of economic defences, a line of richest mineral resources, ores, works and power stations, built up during the three Five-Year Plans.

At the beginning of the Patriotic War Soviet industry was to a considerable extent transported to the Urals. The success of this transplantation of hundreds of works, tens of thousands of machine-tools and millions of workmen, never before witnessed, will always remain interesting and instructive in the highest degree for the historian. In this great effort science played an essential part. The Academy of Sciences of the U.S.S.R. took the most extensive part in mobilising the resources of the country. The Academy of Sciences set up a commission for the mobilisation of the resources of the Urals and other eastern districts, over which I had the honour to preside

* During the twenty years from 1920 to 1945 the Academy sent out over 500 learned expeditions, composed of scientists in various fields, to study mineral and power resources, etc, in various parts of the U.S.S.R. Almost every chemical element has now been found to exist in Soviet territory —*Editor*.

in 1941-1943.* This commission planned in detail immediate measures affecting heavy and non-ferrous metallurgy, power, transport, the production of building materials and agriculture.

During all my fifty years of scientific activity I have never experienced such deep moral satisfaction as when I was working at the mobilisation of the inexhaustible resources of our great country in the cause of defence. Never yet has there been among scientists such a vast creative enthusiasm. It embraced all spheres of Soviet science. Soviet physicists were bringing into being the theoretical and experimental pre-requisites for the building of new forms of armament. Mathematicians were working out methods of most rapid calculation for the needs of the artillery, the air force and the fighting ships. Chemists discovered new methods of producing explosives, alloys, pharmaceutical requirements. Biologists discovered additional food resources for the Red Army and the people. Doctors by their new methods of war medicine saved tens of thousands of the precious lives of our soldiers. We take pride that in our work we gave all the help in our power to our heroic Red Army and Navy, who crushed the German Fascist invaders. . .

During the war our international scientific connections have expanded and grown stronger uniting against Hitlerism, the democratic countries called science to the aid of the great cause of emancipation. In this struggle against Fascist Germany, the science of the anti-Hitler coalition was relying upon its historic traditions. The science of the freedom-loving nations grew up under the banner of democracy and progress.

* Professor Komarov had conferred on him the title of "Hero of Socialist Labour"—the highest civilian distinction of the U S S R—for this work.—*Editor*.

The ideas of freedom and democracy were the guiding star of the foremost elements of English society in the age when modern English natural science came into being. Freedom of scientific creative work was the guiding principle of that scientific centre of Europe, the Royal Society of London. It was democratic, freedom-loving ideas that inspired the work of such men of genius as Bacon, Newton, Faraday, Maxwell, Darwin and other British scientists.

Russian science is historically linked with British. The works of Darwin met in Russia with a tremendous scientific and public response*. Darwin himself took an interest in the first steps of the brilliant constellation of Russian Darwinists, while to-day Darwinism has found its second country in the U.S.S.R. British science always placed a high value upon the work of Mendeleyev, Timiryazev, Pavlov, Lebedev and other outstanding figures in Russian natural science. In the days of the great Patriotic War Soviet scientists have striven to reinforce and expand their connections with British science.

American natural science is also penetrated with progressive ideas. The first great American naturalist, who investigated atmospheric electricity and built the lightning-conductor, Benjamin Franklin, was a fighter for liberty. "He took lightning from the sky and power from tyrants," runs the epitaph over Franklin's tomb. An example of the historic scientific connection between Russia and America were the physical works of Lomonosov, who continued the investigations of Franklin. The Academy of Sciences cherishes these traditions and strives to extend its links with American science.

The same traditional bonds of friendship unite us with French science. we remember how France met the

* Darwin was elected a corresponding member of the Academy of Sciences —*Editor*.

works of Chebyshev, Mechnikov, Vernadsky. Close friendship again binds us together with the scientists of the Slav States

We remember the past and we look into the future. Before us is a great era of work. I will permit myself to express my confidence that in the new conditions of world prosperity Soviet science* will adorn our people with new discoveries, worthy of the great Stalin epoch.

*The Academy of Sciences in 1946 comprises some 150 learned institutions, including 53 research institutes, 16 independent laboratories, 6 observatories, 35 stations and 15 museums—apart from the branches and the independent Academies listed on pp 87 and 88, and 4 territorial research stations in the Komi Autonomous Soviet Socialist Republic, in the Kola Peninsula, in the Far East, and at Archangel. There are 144 full members and 201 corresponding members, the latter including eminent foreign scientists. The two main libraries of the Academy comprise 8 million volumes, and the 71 libraries of its specialised institutions another 2,900,000 volumes. Its scientific staff numbers 4,213 —*Editor*.

FROM THE STATUTES OF THE ACADEMY OF SCIENCES OF THE U.S.S.R.

1 The Academy of Sciences of the U.S.S.R. is the highest scientific institution of the U.S.S.R., bringing together the most outstanding scientists of the country. The Academy of Sciences is subordinated directly to the Council of Ministers of the Union of Soviet Socialist Republics, and presents an annual report of its activity to that body.

2. The main purpose of the Academy of Sciences is to promote in every possible way the general progress of both theoretical and applied knowledge in the U.S.S.R., the study and development of the achievements of world scientific thought. The Academy of Sciences found its work upon the planned utilisation of scientific achievement to assist in the building of a new Socialist classless society.

3 In order to carry out this fundamental task, the Academy of Sciences.

(a) concentrates its work upon the most considerable and decisive problems of science in all its branches,

(b) studies the natural resources and productive forces of the country, and likewise the cultural and economic achievements of mankind, and promotes their timely and rational use;

(c) promotes the improvement of the qualifications of scientific workers of the U.S.S.R.;

(d) assists the highest government bodies of the U.S.S.R. by organising expert scientific opinion.

4. The Academy of Sciences of the U.S.S.R. consists of eight sections: the Section of Physical and Mathe-

mathematical Sciences, the Section of Chemical Sciences, the Section of Geological and Geographical Sciences, the Section of Biological Sciences, the Section of Technical Sciences, the Section of History and Philosophy, the section of Economics and Law, the Section of Literature and Language.

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10. The Academy of Sciences consists of members (Academicians), honorary members, corresponding members and the basic staff of scientific workers engaged in the institutions of the Academy of Sciences.

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25. The highest body of the Academy of Sciences is the General Meeting, consisting of all the members and honorary members of the Academy of Sciences

26. The General Meeting lays down general lines for the scientific work of the Academy of Sciences and its component parts and decides basic questions of an organisational character, hears reports both of the branches and institutions of the Academy of Sciences and of its individual members, discusses problems of a scientific, scientific-technical and scientific-social character, elects honorary members, members and the Presidium of the Academy of Sciences and confirms the election of corresponding members of the Academy of Sciences.

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35. The Presidium gives effect to the decisions of the General Meeting, and between General Meetings is the highest directing body of the Academy of Sciences. The Presidium reports on the most important decision it has taken at the next session of the General Meeting.

ACADEMIES OF SCIENCES IN THE UNION REPUBLICS

Union Republic	Founded as Branch of Academy of Sciences of U.S.S.R.	Became independent Academy	Where Situated	President
Ukraine	—	1920	Kiev	A. A. Bogomoletz (died July, 1946) K. V. Gorev
Byelorussia	—	1928	Minsk	J. Matulis
Lithuania	—	1940	Vilnius	N. I. Muskhelishvili
Georgia	1932	1941	Tbilisi	J. A. Orbeli
Armenia	1936	1943	Erevan	T. M. Kary-Niyazov
Uzbekistan	1940	1945	Tashkent	M. Mir-Kassimov
Azerbaijan	1932	1945	Baku	K. I. Satpayev
Kazakhstan	1932	1945	Alma-Ata	J. Leinsh
Latvia	—	1946	Riga	H. Krus
Estonia	—	1946	Tallinn	

BRANCHES OF THE ACADEMY OF SCIENCES OF THE U.S.S.R.

Founded	Republic or Zone	President	Institutes	
			Situated in	Institutes
1932	Tadjik S.S.R.	E. N. Pavlovsky (academician)	Stalmsbad	1—Geological; 2—Zoological; 3—Stock-breeding; 4—Botanical, 5—Historical, Literary and Philological; and several observatories, stations, laboratories, etc.
1932	Urals	I. P. Bardin (academician)	Sverdlovsk	1—Mining and Geological; 2—Chemical; 3—Metallurgical; 4—Biological; and an experimental station.
1941	Turkmen S.S.R.	B. A. Keller (academician)	Ashkhabad	1—Geological; 2—Botanical; 3—Zoological; 4—Physico-Technical; 5—Historical, Literary and Philological; and several experimental stations.
1943	Kirgiz S.S.R.	K. I. Skryabin (academician)	Frunze	1—Geological; 2—Chemical; 3—Biological; 4—Historical, Literary and Philological; 5—Museum of Kirgiz national culture.
1944	West Siberia	A. A. Skochinsky (academician)	Novosibirsk	1—Geological and Mining; 2—Biological and Medical; 3—Chemical and Metallurgical; 4—Transport and power.
1945	Middle Volga	A. Y. Arbuzov	Kazan	1—Chemical; 2—Biological; 3—Physico-Technical; 4—Water Power; 5—Historical, Literary and Philological.

**BRITISH AND AMERICAN MEMBERS OF THE
ACADEMY OF SCIENCES OF THE U.S.S.R.**

GREAT BRITAIN

Honorary Members

- MAX BORN. Edinburgh. Speciality: Physics. Elected in 1925.
- GODFREY HAROLD HARVEY. Cambridge. Speciality: Geometry. Elected in 1934.
- FREDERICK HOPKINS. Cambridge. Speciality: Biochemistry. Elected in 1934.
- ERWIN SCHRODINGER. Oxford, Dublin. Speciality: Physics. Elected in 1934.
- SIR HENRY HALLET DALE. London. Speciality: Physiology. Elected in 1942.
- JOHN BURDON SANDERSON HALDANE. Rothamsted, Harpenden. Speciality: Biology. Elected in 1942.

Corresponding Members.

- SIR CHARLES SCOTT SHERRINGTON. Cambridge. Speciality: Physiology. Elected in 1915.
- FRANCIS WILLIAM ASTON. Cambridge. Speciality: Chemistry. Elected in 1924.
- EDWIN STEPHEN GOODRICH. Oxford. Speciality: Zoology. Elected in 1924.
- FREDERICK SODDY. Oxford. Speciality: Chemistry. Elected in 1924.
- FREDERICK WILLIAM THOMAS. Oxford. Speciality: Indology. Elected in 1924.
- REGINALD ALDWORTH DALY. London and Cambridge. Speciality: Geology. Elected in 1929.

- PAUL ADRIEN MAURICE DIRAC. Cambridge. Speciality: Physics. Elected in 1931.
- DAVID MEREDITH SEARES WATSON. London, Speciality. Palaeontology. Elected in 1932.
- CHARLES ROCKWELL LANMAN. London and Cambridge. Speciality. Indology. Elected in 1932.

UNITED STATES OF AMERICA

Honorary Members

- ALBERT EINSTEIN Princeton, N. J. Speciality Mathematics. Elected in 1927.
- ROBERT WILLIAMS WOOD. Baltimore. Speciality: Physics. Elected in 1930.
- LELAND OSSIAN HOWARD. Washington, D.C. Speciality. Zoology and Anatomy. Elected in 1930.
- THOMAS HUNT MORGAN Pasadena, Calif. Speciality: Genetics. Elected in 1932.
- WALTER BRADFORD CANNON. Cambridge, Mass. Speciality Physiology. Elected in 1942.
- ERNEST LAWRENCE. Berkeley, Calif. Speciality Physics. Elected in 1942.
- GILBERT NEWTON LEWIS Berkeley, Calif. Speciality: Chemistry. Elected in 1942.

Corresponding Members.

- HERBERT SPENCER JENNINGS Los Angeles, Calif. Speciality: Zoology. Elected in 1924.
- WILLIAM WALLACE CAMPBELL. Berkeley, Calif. Speciality Astronomy. Elected in 1924.
- HERBERT VINCENT NEAL. Boston, Mass. Speciality Zoology. Elected in 1924.
- JAMES FRANCK Chicago, Ill. Speciality: Physics. Elected in 1927.
- HERMANN JOSEPH MULLER. Amherst, Mass. Speciality: Genetics. Elected in 1933.

APPENDIX

STALIN PRIZES FOR SCIENTIFIC ACHIEVEMENTS

Stalin Prizes were instituted by the Soviet Government in 1939 in honour of the 60th birthday of Joseph Stalin. That year 94 awards were established, but later the number was increased considerably.

The Government has awarded the title of Stalin Prize Winner (Stalin Laureate) together with large monetary awards (up to 200,000 roubles) to outstanding scientists, inventors, designers, writers, poets, musicians, painters, sculptors, actors and others.

The awarding of the Stalin Prizes has become an annual national event, a celebration and a review of Soviet culture. Stalin Prizes, which aim at fostering the creative spirit in all fields of science and art, are given to innovators who have distinguished themselves by their creative daring and blazed new paths in science, literature, art, industry. The prizes are bestowed by the Council of People's Commissars of the U.S.S.R., but before this is done the services of the candidates for Stalin Prizes are generally considered by the people. Candidates for Stalin Prizes are nominated by scientific, cultural and public organisations; the value of their work is judged by outstanding authorities in the various fields of science, literature and art. The names of those people adjudged Stalin Prize winners are given wide publicity in the press.

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In the three years 1941-43, Stalin Prizes were awarded to people in various walks of life from academician to worker.

Among the Stalin Prize recipients for these years we find the names of Academicians P Kapitza and M Pavlov, known to the whole scientific world. Side by side with them we have the steel-worker I. Valeyev of the Urals Machine Building Plant, I Zaverailo, a miner, and S. Davydov, tool-maker of the Stalin Automobile Plant of Moscow.

Academician Kapitza has received the prize twice, once for his method of obtaining liquid air and liquid oxygen, and the second time for his discovery and study of the superfluidity of liquid helium. Academician Pavlov, founder and leader of the Soviet school of metallurgists, who has trained many engineers and scientific workers, is the author of the classical work, "The Metallurgy of Cast Iron."

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Soviet scientists and technologists whose names appeared on the list of Stalin Prize awards for 1943-44 include the following:

A Stalin Prize was awarded to the team of physicists headed by Academician S I Vavlov for outstanding discoveries and investigations of the motion of electrons in a dense medium with a velocity greater than that of light in that medium.

A prize of 100,000 roubles was awarded to Konstantin Petrovich Petrzhak, senior scientist of the Radium Institute of the Academy of Sciences of the U.S.S.R.; and to Georgi Nikolayevich Ferlov, senior scientist of the Academy of Sciences of the U.S.S.R. for the discovery of the phenomenon of the spontaneous disintegration of uranium atoms.

The young Soviet astro-physicist V A Ambartsumian, Vice-President of the Armenian Academy of Sciences, has been honoured for his new theory of the diffusion of light in turbid media. This research work is of great importance

for the solution of a number of astro-physical problems, and for obtaining visibility under water, in fog, and so on.

A Stalin Prize has been awarded to the eminent mathematician M. A. Lavrentyev, Vice-President of the Ukrainian Academy of Sciences, for evolving a new mathematical method for solving non-linear problems in the field of differential equations with partial derivatives. This method has had a wide application in solving various problems of hydro—and aero—mechanics and is of great interest for Soviet aviation.

Academician Rodionov has won an award for his achievements in the field of chemistry, especially for his work on the synthesis of amino-acids and complex heterocyclic compounds. Academician A. N. Terenin has been awarded a first-class prize for his researches on photochemical processes.

Professor Bykov of the Naval Medical Academy received a prize for his work on "the cerebral cortex and internal organs." He has developed the teachings of the famous Russian biologist Pavlov on higher nervous activity, opening up a new sphere in physiology.

One of the most interesting awards in the field of technological sciences was that to the team headed by Professor Aseyev of the Leningrad Mining Institute. Aseyev's team conducted research on ores essential to non-ferrous metallurgy, in particular copper and nickel ores, and evolved new methods of concentrating these ores and of smelting metal from them.

Rear-Admiral Papkovich, corresponding member of the Academy of Sciences, has been awarded a prize for his two-volume work on "The Mechanics of Shipbuilding." Professors Drodnitsyn and Loytsyansky received prizes for outstanding work in the field of aero-dynamics.

A prize has been conferred on the team of engineers headed by N. P. Ivanov who was responsible for the power-

ful hydro-turbines and generators installed at the Shesna and Uglich hydro-electric power stations of the Upper-Volga network. The 55,000 kilowatt turbine produced by this team is the most powerful of its type in the world.

A group of prize-winners headed by M. I. Grinberg produced a new turbo-generator with a capacity of 100,000 kilowatts, making 3,000 revolutions per minute.

For creating new models of high-speed and powerful diesel engines for vessels, a Stalin Prize has been awarded to the team of engineers working under Kazyakin and Matveyev.

Many geologists were among the prize-winners. Yero-feyev has been honoured for his discoveries of new deposits of tin; Karzhavin, for creating an aluminium base in the Urals, Yengurazov and Kuznetsov were responsible for exploring and exploiting the Yelshansk sources of natural gas near Saratov.

Among the representatives of medical science in the list of awards is professor Voino-Yasenetsky, consulting surgeon to the evacuation hospitals of the Tambov Region, who has been honoured for his work on new surgical methods in healing septic diseases and wounds. Prizes were also conferred on Professor Bayandurov of the Tomsk Medical Institute and Professor Rauer of the Central Institute for doctors.

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For outstanding scientific work in 1945, the following were among those to whom Stalin Prizes were awarded.

One first prize of 200,000 roubles and four second prizes of 100,000 roubles have been awarded for work in physics and mathematics. The first prize went to Ivan Vasilyevich Obreimov, corresponding member of the Soviet Academy of Sciences and Director of the Academy's organic chemistry laboratory, for work in the sphere of optics and

crystal physics, contained in a paper published last year on the application of Fresnel diffraction to physical and technical measurements.

A second prize has been awarded for the discovery of new forms of fission of atomic nuclei caused by cosmic rays. It went to Dr. A. P. Zhdanov for work described in his paper "Anomalous Fission of the Nuclei of Bromine and Silver by Cosmic Rays," published in 1945.

Corresponding member of the Academy of Sciences N. M. Vul, director of the "Lebedev" physics laboratory, won a second prize for the discovery and investigation of super-high dielectric permeability of titanate of barium. His results were published in four papers last year; on the dielectric permeability of the titanates of metals of the second group, and on the dielectric permeability of barium titanate as a function of pressure, as a function of tension in an alternating field, and at low temperatures.

M. S. Molodentsky, of the Central Institute of Geodesy, Aerial Photography and Cartography, won a second prize for his work on "Basic Questions of Geodetic Gravimetry"; and Dr. A. I. Maltsev, of the "Steklov" Mathematical Institute, for four mathematical papers on the theory of groups. "The Semi-Simple Sub-groups of the Li-Groups," "The Commutative Sub-Algebras of Semi-Simple Li-Algebras," "On the Solvable Li-Algebras," and "On the Theory of Li-Groups as a Whole," all published in 1945.

For chemistry, a first prize of 200,000 roubles was awarded to Professor I. N. Nazarov, director of the laboratory of the Soviet Academy's Institute of Organic Chemistry, for research on acetylene and its derivatives, described in paper published in 1945.

Work on the physiology of the higher nervous system wins a first prize (200,000 roubles) for the director of the laboratory of the "Pavlov" Institute of Physiology, Dr. Maria Petrova.

Three first prizes (200,000 roubles each) were awarded for medical research. One went to Professor D.M.Zhdanov corresponding member of the Academy of Medical Sciences, for work on the anatomy of the lactile duct and the main lymphatic collectors. The other two went to N. L. Polenov, director of the Leningrad Neuro-Surgical Institute, and Dr. A. V. Bandurchuk, of the same institute, for research on neuro-surgery and the elaboration of an original operation.

In the sphere of history and philology, first prizes of 200,000 roubles have been awarded to the authors of volumes 2 and 3 of "The History of Diplomacy," published in 1945: Academicians V. P. Potemkin and E. V. Tarle, Professor V. M. Khvostov, and corresponding members of the Soviet Academy, I. I. Minz and Anna Pankratova. also wins a first prize of 200,000 roubles for work on philology.

LITERATURE

WRITERS AND READERS IN THE U.S.S.R

SINCE June, 1941, a number of Soviet writers have become very well known in Great Britain. Prior to the war the only one whose name was known outside a small circle was Mikhail Sholokhov, whose Cossack trilogy, commencing with *Quiet Flows the Don*, had enjoyed considerable popularity. That popularity remains undiminished and, despite constant reprinting, the works of Sholokhov are more often out of print than in

Meanwhile other Soviet names have become equally well known—particularly that of Ilya Ehrenburg, whose war despatches published in a wide variety of newspapers attracted a great deal of attention, and whose novel *The Fall of Paris* was a best seller around Christmas, 1942. This article is intended to give a picture of what kind of books are being written and read in the U.S.S.R. today, and to tell you something of the part the Soviet writers are playing in their country's war effort

WRITING ABOUT THE WAR

Many Soviet writers are serving as front line correspondents in the Red Army and Navy, representing *Pravda* and *Izvestia*, and the official service newspapers, *Red Star* and *Red Fleet*. They have stayed behind the German lines with guerilla detachments and Red Army Units that had got cut off, in order to report on Soviet resistance in the rear of the enemy; they have taken part in the defence of Moscow, Leningrad, Sevastopol and Stalingrad, they have accompanied commando raids by Black Sea fleet marines. Here are a few such war biographies.

A. Polyakov, *Red Star* correspondent, left for the front the moment the first news was received of the German invasion.

He was attached to a Red Army unit commanded by Major-General Galitsky, which was later cut off by German tanks and surrounded. It succeeded, however, in fighting its way out of encirclement and making its way back to the Soviet lines—one of the first of a whole series of such exploits which gave rise to the Soviet military saying:

"The Red Army does not know the meaning of the word encirclement; it refuses to recognise the existence of such a state of affairs as being surrounded."

Later, Polyakov accompanied five of the famous heavy K. V. tanks from their factory and training ground deep in the interior to their first engagements with the enemy on the shores of Lake Ilmen and the Staraya Russa area. He himself lived and worked with the tank crews and rode into action with them throughout a whole series of complicated and hazardous operations. His description of this was published under the title of *Westbound Tanks*.

The life of a Soviet war correspondent is subject to just as many risks as that of a front-line soldier; when he goes into action he stays there with the unit to which he is attached. Polyakov, alas, was killed last year in action.

Later in the same year, Soviet literature suffered a heavy loss with the death on active service at Sevastopol of Eugen Petrov, author, in collaboration with Ilya Ilf, of two sparkling satirical novels: *The Little Golden Calf* and *Diamonds to Sit On*, and a delightful and strikingly original travel book, *One Storied America*.

Petrov had had no previous experience as a military correspondent. In November, 1941, he toured the Moshensk and Volokolamsk sectors of the Moscow front and wrote a series of reportage sketches published in collected form as *Moscow at Our Backs*.

He was present at the recapture of Klin and described the revolting havoc which the Nazis wrought at the Tchaikovsky Museum. During the spring and summer of

1942, Petrov saw service with the garrison of Sevastopol and the Black Sea fleet which kept it supplied throughout the siege. In a characteristic sketch written shortly before his death, he described his experience on board a destroyer which was ferrying a detachment of Siberian troops from a Black Sea port to reinforce the Sevastopol garrison.

Some of the Siberians had never been to sea before, one of them, in the middle of a particularly severe attack by Nazi dive-bombers, said:

"It's not so different from the steppe, but if only it would stop moving up and down!"

A young Soviet writer who has seen service all along the entire length of the 1,500-mile front is Konstantin Simonov, author of the play *The Russians*, produced by Tyrone Guthrie and performed by the Old Vic Company at the playhouse Theatre in London this season.

Simonov has been in action against the fascist Finns in the woods around Lake Petsamo; the Red Army unit he was with was one of the last to leave Odessa, and he was very nearly captured during the evacuation of the Kerch isthmus.

A volume of his collected sketches and front-line dispatches has recently been published under the title *From the Black Sea to the Barents Sea*. He writes with almost phenomenal speed and under conditions which would make the average war correspondent, accustomed to the minimum amenities of a typewriter and a packing case, despair.

REPORTAGE

One of the effects of front line conditions on the writer—and in the U.S.S.R. front line conditions apply to cities such as Leningrad and Stalingrad, also Moscow during the critical autumn months of 1941—has

been to engender widespread use of the reportage form. The type of descriptive sketch to which the Americans originally gave the term reportage, has been defined as applying "fictional form to the reporting of fact" i.e., taking an incident, or piece of life, and writing it up as if it were a short story, but without taking any liberties with the facts

It is of course particularly suitable for the writer in time of war when reality abounds in anecdotes all of which are set against the common background of tremendous and tragic experience. It is particularly suitable also because it serves to get it down on paper quickly while it's hot, so to speak, rather than save it up in the cold storage of the mind or the notebook

In war, when events often move too fast for the novelist to get his material in perspective, the reportage form is invaluable. Its results are seldom without, at any rate, a documentary value, and in the hands of a master it can produce really fine writings

During the war Soviet writers are turning out a tremendous number of these reportage sketches Tikhonov, Sobolev, Savich, Rubinstein, Pavlenko, Wassilewska, Panferov, Grossmann, Krieger, the list could be extended almost indefinitely.

Subjects range from incidents at the front or behind the enemy's lines with the guerilla detachments, to domestic vignettes of everyday life in cities far removed in space from the front line. Wherever the setting, however, the war is always there. No need to introduce it in order to satisfy the requirements of home front propaganda.

Here, then, is a selection of a few typical collections of these reportage sketches, out of the many which have been published in volume form in the U.S.S.R.

The Soul of the Sea, by Leonid Sobolev (awarded a Stalin prize for 1942), who is a young writer, little known

before the war. He has been serving as a correspondent with the Red Navy. He has a vivid descriptive touch and at times, a rather surprising vein of sensitivity.

Tales of Leningrad, by Nikolai Tikhonov, the well-known Soviet poet. These were all written during the 1941-42 period of Leningrad's defence. Tikhonov, together with other Soviet writers, including Zoshchenko, whose short stories are well-known in this country, and Shostakovich the composer, is a native of Leningrad and has stuck it out in his native city throughout the siege, doing A.R.P. work. Zoshchenko was an air raid warden; Shostakovich a fireman.

Tikhonov's stories in this little book have a curiously unexpected, defiant lyrical note skilfully introduced into the factual account.

The People Immortal, by Vassili Grossman, leading *Red Star* correspondent with a particularly clear, distinctive style. This collection deals mainly with the Red Army in Action.

Russia at War, by Ilya Ehrenburg. This is a selection from his articles published in the Soviet Press between July, 1941, and April, 1942. J. B. Priestley writes as follows in the preface to the English edition:

"They seem to me the best writing of their kind that the United Nations can show.. what distinguishes Ehrenburg's work, raising it high above the ordinary level of war propaganda is the use it makes of significant detail, for which Ehrenburg has a sharp, trained eye, and its bitter and ruthless wit. There is no shadow-boxing here; every blow gets home. You are made to feel in truth that he is writing in a hurry, with his typewriter resting on a packing-case and the world about him in blazing ruins."

SOME WARTIME SOVIET NOVELISTS

The outstanding novel dealing with the war on Soviet territory to have been published in the U.S.S.R. last year is probably Wanda Wassilewska's *Rainbow*. This

describes a few weeks in the life of a German-occupied village in the Ukraine. They are, as it happens, the last few weeks before a Red Army counter-attack which liberates the village and those of its inhabitants who have survived the struggle against German occupation and a terror whose brutality has been becoming incessantly hideous as the tension grows.

This book gives you real hell. I know of no other novel which has provided such a powerful, realistic and sincere description of Nazi terror in action. In addition, it has a genuine, unforcedly earthly feeling for the Ukrainian countryside.

Wassilewska herself is of Polish origin, and married to the Ukrainian playwright Alexander Korneichuk, author of *Guerillas of the Ukrainian Steppes* and *The Front*, and this year appointed one of the Deputy Commissars for Foreign Affairs.

She, too, has been serving as a front-line correspondent. Indeed, she has been awarded senior officer's rank in the Red Army. She has herself been behind the German lines, and the events she describes in *Rainbow* she has herself witnessed at first hand and at great danger to her life.

Wanda Wassilewska is one of the best-known personalities in the Soviet Union, not alone for her writing, but for her manifold political activities. She was one of the most active spirits in convening the Soviet Women's Anti-Fascist Conferences, and also the very successful 'All-Slav Conferences. But today her name is famous—above all these things—as the inspirer and President of the Union of Polish Patriots in the U.S.S.R.

Sholokhov has been at the front (indeed at one time, when the authorities were nervous about his safety, they had considerable difficulty in getting him away from it) and written several newspaper stories and a couple of ex-

cellent short stories: *Down South* and *The Science of Hatred*, which gives an agonising account of the experiences of a Red Army officer who was captured by the Nazis but managed to escape. He is at present finishing a new novel with a war setting.

An important literary event last year was the publication of the completed long novel by Alexei Tolstoy, entitled *The Road to Calvary*. The first two parts of this were published in this country some years ago under the title *Darkness and Dawn*.

This is certainly Alexei Tolstoy's finest work and the one on which his great reputation in the U.S.S.R. as a novelist is based. Together with Sholokhov's novels of the Don, it represents the most massive achievements of Soviet fiction.

The title is taken from the name of a 12th century legend of Ancient Russia, telling of the journey of the Mother of God into hell where she witnessed the punishment of sinners. The first part, entitled *The Sisters*, describes the life of the Russian intelligentsia on the eve of the first world war, the war itself and the Russian Revolution of 1917. The second part 1918, portrays the initial stages of the Russian civil war, when

"the Soviet Republic, so its enemies thought, was doomed to fall in the very near future. But the Republic mustered the full force of its mind and science, and rallied the spiritual and material strength of the nation to launch an attack."

The last part, *Sullen Morning*, carries forward the story of the mobilisation of Soviet-Russian might and ends with an account of the solemn session of the Supreme Soviet which adopts the plan for peaceful construction. The principal characters are representative of the Russian intelligentsia. It is interesting to note that when the first volume appeared it was read by only a limited number of intellectuals, but was regarded as "too highbrow" by the

mass of the reading public. The full trilogy, however, is now being eagerly read by millions.

Tolstoy has also been writing articles for the Soviet press and doing a good deal of broadcasting on Moscow Radio, a popular feature of which is readings either by Soviet authors or by well-known actors of extracts from their works. He is not such a technically skilful publicist as, for example, Ehrenburg, but he sometimes rises to a high pitch of eloquence, as, for instance, in 1941, when the Germans were at the gates of Moscow and he issued a particularly moving appeal for wholehearted resistance to "the enemies of Russia, the enemies of culture."

Ilya Ehrenburg's brilliant documentary novel of the French capitulation and betrayal, *The Fall of Paris*, is too well known in Britain, where it has already sold over 60,000 copies, to need any further recommendation. Its circulation inside the Soviet Union has gone into millions already.

HISTORICAL NOVELS & BIOGRAPHIES

The war has not been allowed completely to monopolise the Soviet Russian literary scene. It so happens that a recent tendency in Soviet fiction—and one whose results have appeared in published form during the war years, though in some cases the books themselves were written earlier—is the historical novel. Here are some recent examples, all of which have been published during the past two years or so.

Genghiz Khan and *Batu Khan*, by Yanchevetsky. These are the first two parts of a long historical trilogy.

Genghiz Khan itself is a detailed reconstruction of the Mongol invasion. It is very carefully written and succeeds in conveying a strongly oriental atmosphere. Its

author is a distinguished scholar and a specialist in his period, who has put a great deal of painstaking research into the writing of it.

The Great Mouravi, by A. Antonovskaya This, according to the Soviet press, is a brilliantly successful historical recreation of Georgian life and customs at the end of the XVIth century Its principal character is Georgi Saakadze, a famous figure in Georgian history.

The Ordeal of Sevastopol, by Sergeyev Stansky, is a novel of the Crimean War It is enormously long, longer than Tolstoy's *War and Peace*, and represents a very considerable feat of sustained imagination. There is a huge-cast of characters and a most painstakingly detailed account of the military and political aspects of the Crimean War.

Together with these and other historical novels, there have also been a number of biographies of outstanding figures in Russian history Two of these, both of which received mentions in recent lists of Stalin prize awards, were *Suvorov*, by K. Osipov, and *Dmitri Donskoi*, by S. Borodin

The first is a lively presentation of the fascinating character of the famous XVIIIth century Russian military leader whose name is a living tradition in the Red Army today, together with a clear account of his campaigns.

The second is a vivid reconstruction of the life and times of Dmitri Donskoi, the Prince of Moscow who united Russia in the XIIIth century and threw off the Tatar yoke

Kutuzov, by Mikhail Bragin, is another popular biography of a famous figure in Russian history—General Mikhail Kutuzov, conqueror of Napoleon in 1812 The book is based on historical documents and memoirs of Kutuzov's contemporaries.

RECENT LIBRARY FAVOURITES

The popularity of the following two books, which were both outstanding successes in the publishing season of the first war year, give some indication of the catholicity of taste of the Soviet reading public.

One of these books was the first instalment of the memoirs of General Ignatiev, a particularly interesting figure in that he was born and brought up in the innermost circles of the Tsarist court, was one of the Tsar's pages and carried the Tsarina's train at her coronation.

At the time of the Revolution, Ignatiev was acting as military attache to the Russian Embassy in France. By this time he had become deeply convinced of the hopeless and inherent rottenness of the Tsarist regime and threw in his lot with the young Soviet state, of which he has been the faithful servant ever since.

The other book is *Chukotka*, by Semyushkin, which is a delightful account of cultural and educational work among the Chukchee Eskimos inhabiting the remote shores of the Behring Straits. It tells how a party of Soviet teachers succeeded in winning the confidence of the Chukchee children, includes a number of lively anecdotes and provides a great deal of interesting information about the Soviet Government's policy with regard to the backward people among the national minorities of the U.S.S.R.

THE SOVIET READING PUBLIC AND THE CLASSICS

The preoccupation of Soviet writers with war themes is of course only natural and inevitable. It would be a great mistake, however, to suppose that the Soviet reading public has lost any of its voracious enthusiasm for the classics of world literature. And Soviet men of letters have been doing their best to satisfy it.

Here are a few random examples from the field of English literature alone, all from last year. Evgeny Kashkin was decorated by the Soviet Government for his translation into Russian of Chaucer's *Canterbury Tales*, and the production of the book was entrusted to the well-known artist, Borodat.

Boris Pasternak finished his verse translation of *Romeo and Juliet* which was highly praised by Soviet critics, including Professor Morozov, and many other Soviet Shakespearian scholars. A large number of sections of British poets, including Shelley and Burns, are sold. The State Publishing House brought out a new edition de luxe of *Pickwick Papers*.

Dickens has always been a particular favourite of the Russian public. The civil war was hardly over, in 1919, when the Soviet Government issued large editions of *A Tale of Two Cities* and *Oliver Twist*, and every year since then new editions of some work or works of Dickens have been issued.

When, in 1942, subscriptions were invited for the latest edition of Dickens' collected works, the publisher received applications for 20,000 sets in two days.

Soviet Russian interest in Shakespeare can only be described as passionate and intense. Shakespeare's works enjoy an enormous popularity in the Soviet Union, his plays are translated into 24 languages and performed regularly and constantly. Every year the traditional Shakespeare conference is held in Moscow at which a series of papers are read by Soviet Shakespearian scholars.

Readers' interest in the Russian classics themselves, has, if anything, increased since the war.

A few figures will serve to illustrate the gigantic cultural progress achieved during 25 years of Soviet power.

In 1913, in Russia, 26,200 titles were published in an aggregate edition of 86,700,000 volumes, or an average of

3,300 volumes per title. In 1939, in Russia, 43,800 titles were published in an aggregate edition of 701,200,000 volumes, or an average of 16,000 volumes per title. Books in the U.S.S.R. are published in 111 languages.

In pre-Revolutionary Russia, world classics like the works of Shakespeare, Goethe, Cervantes, Balzac, Pushkin, Saltykov-Schedrin, Tolstoy, Chekhov and Gorky were only available to the educated few. From 1917 to 1938 publication of the works of Byron increased some *threefold* as compared with the period 1897-1916, of Balzac *fifteenfold* (in nine languages), of Cervantes about *fivefold* (in ten languages), of Pushkin *threefold* (in 69 languages), of Saltykov-Schedrin over 85 *times* (in 24 languages) and of Gorky over 36 *times* (in 64 languages).

Taking into account the tremendous development of the library chain in the U.S.S.R., the actual circulation of books has increased at least 80 times as compared with Tsarist Russia. In the U.S.S.R. perfect strangers will come up to you in cafes or tramcars and ask what you are reading as though afraid they may have missed something.

CULTURAL PROGRESS IN NATIONAL REPUBLICS

The cultural development of the backward nationalities formerly oppressed by Tsardom has been especially rapid. Before the Revolution 40 of them did not even have an alphabet. Since 1917 alphabets have been provided and world classics have been translated into their languages. This work has not been interrupted by the war and recently classics of world literature have now been published in the Eskimo language for the first time.

This progress is perhaps most marked in the Moslem republics and has been more than maintained during the war period. In the central Asiatic Republics—Uzbekistan,

Turkmenistan, Tadjikistan, Khirghizia and Kazakstan—on January 1, 1941, there were 140 theatres of which 103 were performing in the languages of the native populations. In these republics there were 7,407 libraries, 8,442 clubs, and 53 museums

The languages of the Moslem peoples and their ancient literature is being revived. Russian and European classics are being translated into the languages of the Turke-Tatar peoples. Shakespeare's plays have been translated for the first time into the Uzbek and Tadjik languages and performed with success in Tashkent, Stalingrad and Samarkand.

Azerbaidjan, Uzbekistan, and Tadjikistan have their own people's artists; and poets, writers and dramatists of the peoples of the Caucasus, Central Asian and Volga regions have acquired an honoured place in Soviet Art.

During the war the writers of Kazakstan have produced several important works. The doyen of these writers is the veteran poet, 96-year-old Akjan Dambul, who was awarded a Stalin Prize for 1940. Today he sends his new songs of battle to the Kazak Red Army men and officers at the front.

The Khirghiz poet Al Yamkula's military verses have been translated into Russian. Another Khirghizian author, Tokobayer, has written a play about the Khirghizian Red Army men

WAR PLAYS

Any consideration of the contribution of Soviet writers to the war effort would be incomplete without some mention of the modern Soviet war plays. The way in which these are being performed, often in more than one theatre at the same time in the same city, is a striking symptom of the wholehearted enthusiasm of the Soviet war effort.

This is not the place to deal with the Soviet Theatre in detail, but the following four plays are worth mentioning in any case, as they are definitely outstanding. They were awarded, respectively, the two first and two second Stalin prizes for plays in 1942.

The Front, by Alexander Korneichuk. This is a study of the downfall and ultimate dismissal of a Red Army General, a veteran of the civil war, who refuses to move with the times and keep abreast of modern military-scientific developments. He is ultimately replaced by a younger man.

This play has had an enormous success in the U.S.S.R. and was performed simultaneously in three different theatres in Moscow. The Soviet Government regarded it as exceptionally important and the press devoted a great deal of space to it. From the political and military point of view this play is of great interest. Its staging at a critical period of the war represented a remarkably bold piece of self-criticism and one which only an exceptionally confident, realistic and broad-minded Government would have decided to sanction.

Days of Invasion, by Leonid Leonov. The scene is a small Russian town just after the Germans have occupied it and the action concerns Soviet resistance to the invaders. One or two evil intentioned relics of the Tsarist regime creep out like bugs from the plaster. The Nazi terror becomes more and more acute. In the last act the town is retaken by the Red Army. The characterisation is distinctly subtle and the play has at times an oddly poetic flavour.

The Russians, by Konstantin Simonov. This is a vigorous, sincere play about an encircled Red Army unit holding out in one part of a town the other half of which is occupied by the Germans whose occupation is being made none too comfortable by Soviet guerillas. Exciting action

and accurate character studies of some variegated types of Red Army men and civilians. A love story under the strained circumstances.

Guerillas of the Ukrainian Steppes, by Alexander Korneichuk. This is a singularly attractive short play, with a successfully blended mixture of folk poetry and realism, depicting the vital reactions of some Ukrainian peasant collective farmers to the news that the Germans are approaching and the instructions to burn their crops.

A note or two about a few more plays may be of interest. Yuri Herman, the novelist, author of *Antonina* and *The Gangster*, has written a play called *To Those at Sea*, which portrays the crews of the convoy ships on the northern route

Valentin Kataev, novelist and playwright, author of *The Embezzler*, *Forward*, *Oh Time*, *Lone White Sail*, and the play *Squaring the Circle*, has a new comedy, *The Blue Scarf*, dealing with the imbroglio that develops when a handful of Red Army men try to trace the girls who send them parcels

TWENTY-SIX YEARS OF SOVIET LITERATURE—SOME NOTES FOR ENGLISH READERS

BACKGROUND AND LINKS WITH THE PAST: In the first quarter of a century of its existence the Soviet Union gave rise to a profuse, vigorous and interesting literature which is the product and at the same time the reflection of a unique period of continuous and very rapid transformation and development. It was natural and inevitable that such a literature should be steeped in social consciousness and the sense of social responsibility. In this respect, however, it does not represent a breach with the past, but rather an extension of the great Russian literary tradition.

As a contemporary Soviet critic writes: "The creative endeavour of the writers of the 19th century, the Golden Age of Russian literature, developed under the motto of the struggle against autocracy and serfdom, of ruthlessly exposing the reality which fettered both the material progress and the spiritual development of man . . . on the banner of Russian literature there has always been inscribed the great word 'humanism' "

Pushkin, Gogol, Lermontov, Goncharov, Saltykov-Schedrin, Turgenev, Chekhov—all these great writers were "socially-conscious" and most of them were imbued with a prophetic sense of Russia's historic mission. Often this sense was only partly conscious and was misdirected and several of the greatest Russian writers misunderstood the nature of the developments they were reflecting, but this did not affect the artistic integrity of their vision. "Oh Russia, Russia," exclaimed Pushkin, beating his head against the wall, after he had finished reading Gogol's satirical picaresque masterpiece "Dead Souls," of whose real sociological implications Gogol himself was certainly not fully aware. Tolstoy and Dostoevsky preached variations of a gospel of submission by which Russia was to redeem humanity, but this did not prevent them from recreating, with masterly insight, a vast panorama of the social life of their time and revealing it as ripe for revolutionary change.

Outside Russia, the progressive force of the great 19th century writers has been underestimated and in some cases neglected. For instance, many of Chekhov's western admirers have tended to regard him as an ivory tower dweller, the dreamy sensitive, specialist in catching the various shades of grey; whereas, in fact, as Gorky pointed out, Chekhov was a passionate believer in human progress with a strong sense of the practical, material values of life.

The attitude of both Soviet literary critics and the public as a whole towards the great 19th century writers is one of the deepest admiration. Their works are printed and reprinted in large editions and translated in the languages of the various national republics. They are esteemed as great Russians, great artists and forerunners of the revolution

PRE-REVOLUTIONARY LITERATURE, GORKY AND THE TRANSITION. Chekhov developed his inimitable and highly individual technique of impressionistic naturalism to a pitch of perfection. When he died, in 1904, the first cracks in the corrupt and crazy structure of the Tsarist autocracy were already beginning to appear.

During the period between the end of the 19th century and the 1917 revolution, the Russian literary scene presented a diverse and somewhat contradictory picture. The two main tendencies to be observed can be summed up roughly under the headings of "modernism" and realism. Under modernism can be classed a number of writers of varying degrees of talent—mystics, nihilists, symbolists, such as the novelists Sologub, Andreyev, Bely, and the great symbolist poet of genius Alexander Blok. The realists were represented by an independent school, and the group of writers which gathered round Maxim Gorky and his publishing house. "Znanie."

Gorky himself is regarded as the father of modern Soviet literature and the link between the literary past and present of Russia. His pre-revolutionary works, written as the result of first-hand acquaintance with almost every aspect of Russian life, constitute a positive encyclopaedia of Tsarist Russia and his post-revolutionary books faithfully portray the development of the individual in relation to society throughout the storm-and-stress period of revolution.

Gorky may be said to have introduced a new hero, the man of the people, and a new method of presenting him. He was the first writer to become fully conscious of the nature of the social task with which history had confronted the Russian people. His own work is distinguished by an extraordinary acuteness and accuracy of observation and a capacity for lighting up and "vitalising" the drabest scene. Despite his passionate pre-occupation, in his earlier works, with social injustice, and later, with the conscious transformation of human society, he is one of the least didactic of writers. Gorky's influence on Soviet life and literature has been great. It was he who defined "socialist realism," which became the accepted literary current after 1932, as a means of integrating literature and life. "We are interested," he wrote, "in accurate description of reality in so far as this is necessary for a deeper and clearer understanding of all that we must abolish and all that we must build up."

The following tentative selection from those of Gorky's books which have been translated into English should give you some idea of his calibre as an artist and his power as a social and ethical influence. "Through Russia" (autobiographical stories); "Decadence," "Mother," and the novels making up "The Life of Klim Samghin," an enormous work tracing the development of a character throughout the entire revolutionary period, "Days With Lenin," "Fragments From My Diary," "On Guard for the Soviet Union," and "Culture and the People"—two volumes of articles and essays written by Gorky not long before his death and expressing his views on a number of social-political and literary questions.

Another powerful influence in almost every field of Soviet literature (including writings for children) who, like Gorky, served as a link between the old and the new, was the poet Vladimir Mayakovsky, who developed from

an avant-garde futurist into the poet of the revolution. Stalin has said of him. Mayakovsky was and remains the best, most talented poet of our Soviet epoch." Mayakovsky, was unique as a poet who not only accepted the revolution, but, so to speak, jumped forward to greet it and found in it his inspiration. You can get a very good idea both of the nature of his poetry and his enormous services to the revolution in the selection of his work translated by Herbert Marshall

Other poets of international reputation who accepted the revolution, but with reservations, were Alexander Blok, the great symbolist poet, who wrote "The Twelve," and the peasant poet, Esenin, a wayward genius who was nostalgically obsessed with the life of the old Russian village. The poets who stoutly defended the revolution and served it faithfully while continuing to write in their own light individualist vein were another symbolist Valery Bryusov, and Boris Pasternak who remains one of the most talented living Soviet poets

REVOLUTION AND CIVIL WAR: During the period from 1918-1922 history was being made so rapidly and under such intense strain that there was hardly time or opportunity to write about it. The events of these years were the material for a large number of novels, written at various times during the next two decades, which form one of the most important and vital sections of Soviet literature

Some outstanding examples of these chronicles of the Civil War are Furmanov's "Chapayev," a vivid documentary of the peasant guerilla leader, one of the heroes of the Civil War whose memory has become a legend throughout the Soviet Union, who commanded a division against Kolchak in the Urals, Fadeyev's "The Nineteen," which describes the indomitable resistance of nineteen

Soviet guerillas in Siberia and his other Civil War novel "The Rout"; Yury Lebedinsky's "One Week," the story of a peasant rising led by Whites. Babel's "Red Cavalry" gives a series of stark impressionistic sketches of service under Budyenny. Serafimovich's "Iron Flood," an epic of the great march of the Taman army, and Vserdov Ivanov's "Armoured Train 19-69" are also among the most impressive of these Civil War chronicles which have been translated into English.

Sholokhov's novels of the Don Cossacks, "Quiet Flows the Don" and "The Don Flows Home to the Sea," which have been best sellers in English translation, provide a whole panorama of Cossack life during the revolution, both at the front and in the villages, and are generally regarded as among the outstanding achievements of Soviet fiction. (His "Virgin Soil Uplifted" deals with the period of collectivisation) There are a number of other novels, some of them less familiar to outside readers, which trace the fate of individuals of various groups throughout the revolutionary period. Alexei Tolstoy's "Road to Calvary," the third part of which has only just been completed, gives a searching account of the reaction of two sisters, representatives of the Petrograd intelligentsia to the revolution, and covers a vast field of incident, is one of the most remarkable studies of this period and a major work of Soviet literature. Konstantin Fedin's "Cities and Years" and "The Brothers" also deal convincingly with representatives of the pre-revolutionary intelligentsia in the revolutionary and Civil War years.

Two other important novels dealing with this period are Voronsky's "Waters of Life and Death," which provides a fascinating account of Bolshevik Party activities from 1905 onwards, and Ostrovsky's autobiographical "The Making of a Hero," which traces the life history of a young communist who fought with the Red Cavalry.

throughout the Civil War, took an active part in the rehabilitation of the countryside, and later became paralysed and blind. Ostrovsky's courage and determination to fight on despite his infirmities make this a memorable book and one which is held up as a living expression of the communist spirit.

SOCIAL SATIRE: The N E P. period which followed the Civil War gave rise to several comic satirical novels which were freely critical of certain aspect of Soviet life, and written in the traditional picaresque vein of Gogol's "Dead Souls" The three examples of these which have been translated into English are far too little known, but are well worth reading. They are "The Embezzlers," by Valentin Kataev, and "Diamonds to Sit On" and "The Little Golden Calf" The humour of all three of them is peculiarly Russian, with a deft mixture of clowning and satire and some exceedingly subtle characterisation

"The Embezzlers" is a beautifully written story of a cashier and a clerk who go on a fantastic spree in the underworld of Leningrad. "Diamonds to Sit On," an exceedingly funny, vigorous, knock-about farce, is the first instalment of a talented rogue, Ostap Bender, in search of a hidden treasure. Its sequel, "The Little Golden Calf," is a longer, more mature work in which Bender pursues a N E.P., millionaire throughout the length and breadth of the U.S.S.R., only to find when he has black-mailed him out of a million that there are no longer any facilities for millionaires Bender's adventures provide the opportunity for a running fire of satire at the expense of bureaucracy.

The other notable Soviet satirist, whose work is well known in this country, is Mikhail Zoshchenko, who has developed his own inimitable satirical vignettes, written in elaborately simple style and often aimed at the expense

of what Gorky defined as "Soviet philistinism." Until recently these short stories were the only examples of Zoshchenko's work which had been translated into English, and in certain quarters the illusion had sprung up that he was frowned upon by the Soviet authorities. In fact, however, Zoshchenko is not only enthusiastically appreciated by his own countrymen, but he is also the author of stories of the Civil War and also of "The Story of One Life," describing the construction of the White Sea Canal by prisoners whose work was afterwards rewarded by the state.

NOVELS OF SOCIALIST RECONSTRUCTION AND COLLECTIVISATION: The inauguration of the first Five-Year Plan in 1928 marked a new phase in Soviet life which was to have a considerable influence on literature

One of the most widely discussed novels of socialist reconstruction, which was a forerunner of a host of books written after 1928, was Gladkov's "Cement," published in 1925, which traced the story of a former Red Army man and his wife Dasha, who is in fact the central figure, against a crowded background of factory life, and whose solution of her personal problems is an example of the socialist attitude towards life. Of the novels of the Five-Year Plan period, the following are among the foremost translated examples "Forward, Oh Time!" by Valentin Kataev, which is a lively account of a concrete-mixing race between the shock brigades laying the foundations of a gigantic plant; Pilynak's "The Volga Flows Into the Caspian Sea," the principal characters of which are three engineers engaged on work in connection with the Moscow-Volga canal

An important writer, who has written about a number of aspects of Soviet life, is Leonid Leonov. His first post-revolutionary novel was "The End of a small Man,"

which described the sufferings of an elderly scientist during the Civil War period. "The Badgers" was a study of peasant life in the years after the Civil War. "The Thief," set in the N.E.P. period, traced the downfall and ultimate regeneration of a gangster. Leonov's two novels of the construction period are "Sot," dealing with the transformation in the face of enormous difficulties, including sabotage, of a wild tract of land in the Lake Ladoga area into a centre of the paper industry, and "Skutarevsky," the chief figure of which is a scientist who is directing an electrification project and becomes won over to wholehearted enthusiasm for the Soviet system. Of the novels dealing with agriculture collectivisation, in addition to Sholokhov's "Virgin Soil Upturned," perhaps the most outstanding, at any rate as a documentary, is Panferov's gigantic book, "Brusski," which provides a detailed history of the life of a village.

The above are only a few of an enormous number of Soviet novels which deal with every aspect of life since the revolution and provide an extraordinarily detailed documentation of the entire period. Many of them deal with problems of adaptation, either by the individual or special groups. Two examples of these which should be mentioned are Makarenko's "Road to Life," an account of the re-education of homeless adolescents, and Yury Herman's "Antonina," the life story of a Soviet woman who passes through a period of considerable difficulty before she settles down in the new society.

Of Soviet novelists who have chosen subjects outside the U.S.S.R., there is of course the prolific Ehrenburg, best known in Britain as the author of "The Fall of Paris." Ehrenburg has written nearly a dozen books, several of which, notably "The Adventures of Julio Nuenito" and "The Loves of Jeanne Ney," deal either realistically or satirically with life in Europe in between the world wars.

Another novelist, without some mention of whom even the barest catalogue of Soviet literature would be incomplete, is Anatoli Vinogradov, author of 'The Black Consul,' a historical study, based on first-hand documentation, of Toussaint L'Ouverture's revolt in Haiti at the beginning of the 19th century. This has been translated into English. Vinogradov has also written novels about the lives of Stendhal and Paganini, and recently published "The Chronicle of the Malevinskys"—about a family of engineers who played an important part in the gasification of coal.

Historical novels of Russian life are becoming increasingly popular at the present time. The outstanding example of these is Alexei Tolstoy's sweeping, vigorous "Peter I"; another is Chapygin's "Stepan Razin," an exciting reconstruction of the famous 17th century popular hero.

THE STALIN PRIZES

The Stalin Prizes, which were first instituted in 1941, on the occasion of Stalin's 60th birthday, consists of 200,000, 150,000 or 100,000 roubles, equivalent to about £10,000 7,500 5,000 in English money. They are awarded annually to some hundreds of Soviet scientists, engineers, technicians, military inventors, artists and writers for the best cultural or defence achievements of the year.

The First Class prizes in the artistic, including literature, sections amount to 100,000 roubles, and the second prizes to 50,000 roubles.

On the occasion of the institution of the prizes in 1941, literary prizes were awarded as follows:

FICTION

1st Prizes :

Alexei Tolstoy for *Peter I*.

Mikhail Sholokhov for *And Quiet Flows the Don* (Volume 4 of which was published in 1940).

S Sergeev Stensky for *The Ordeal of Sevastopol*.

2nd Prizes :

A Novikov-Priboy for *Tsusima*.

N Virts for *Loneliness*.

L Klacheli for *Gvadi Bigva*.

POETRY

1st Prizes :

Nikolai Aseyev, Yanka Kupala (Byelo Russian); Pavel Tychina

2nd Prizes :

Tamboul (Kazakh), V. Lebedev Kumach (Lyric writer).

S Mikhailov (Children's poetry).

G. Leonidze (Georgian)

A. Tvandovsky

PLAYS

1st Prizes :

A Korneichuk for *Platon Krechst*

K Trenev for *Lyubov Yarovaya*.

N. Pogodin for *The Man With the Gun*.

2nd Prizes :

S Vahgun for *Vagif*

K Krupiva for *He Who Laughs Last*.

V Solovyov for *Field Marshal Kutuzov*

Professor Vladimir Potemkin (Doctor of Historical Sciences), Evgeni Tarle (Member of the Academy of Sciences), and Professor Vladimir Khvostov, were also awarded prizes in the History section for their work entitled *The History of Diplomacy*

1942

Fiction :

Ilya Ehrenburg for his novel *The Fall of Paris*

Yanchevetsky for his novel *Genghiz Khan*.

Poetry :

Tikhonov for his poem *Kirov Is With Us*.

Plays :

Simonov for his play *The Man from Our Town*.

Korneichuk for his play *Guerillas of the Ukrainian Steppes*.

1943

FICTION

1st Class Awards :

Alexei Tolstoy for his novel *Road to Calvary*.

Wanda Wassilewska for her novel *Rainbow*.

2nd Class Awards :

P. P. Bashov for *Malachite Shkatuska*.

Leonid Sobolev for *The Soul of Sea*.

POETRY

1st Class Awards :

F. Rytsky and M. V. Isakovsky.

2nd Class Awards :

M. I. Aliger

PLAYS

1st Class :

Alexander Korneichuk for *The Front*.

L. Leonov for *Days of Invasion*.

2nd Class :

Konstantin Simonov for *The Russians*.

STAGE

ACTORS & AUDIENCES IN THE SOVIET UNION

GOING to the theatre in the U.S.S.R. is a unique experience even for the most hard-bitten playgoer

Normally in Moscow—and throughout this short sketch peace-time conditions are implied unless specifically stated to the contrary—the show begins at half-past seven. This does not mean, however, that the playgoer is home by ten. On the contrary, half-past eleven or even later is a more likely time, for when the Soviet citizen goes to the theatre he has a real evening out. Plays are usually four acts and the intervals fairly lengthy, so that one can easily spend three and a half or even four hours in the theatre.

The exterior of the theatre may not be duly impressive—though there are some exciting new buildings to be seen, not only in Moscow, but even in places as far apart as Rostov and Archangel. The approach and facade of the big Moscow opera house, the Bolshoi, can never be forgotten. But once inside the theatre one immediately notices a new atmosphere. The foyer and the decoration throughout, is sober and restrained. There is rarely any encrusted gilt or elaborate rococo.

People are swarming in, but quietly and in an orderly way. By the time the cloakroom attendant takes one's coat—for it is quite impossible to enter the theatre wearing it—one is able more to define one's reactions.

It is a social occasion that is being attended. There is the same air of politeness, respect and keen expectancy. The audience, as they stream in, might all be going to a big reception. Yet this is a normal evening, with the theatre giving its normal performance.

In the auditorium it is even more interesting. First, there is hardly a vacant seat to be seen, although this theatre has given this play many hundreds of times, for it

is an old favourite and has been long in the repertoire. Then there is not much to distinguish between the different parts of the audience in the way they are dressed. And, common to them all, is the air of excited anticipation. As the time for the curtain to rise draws nearer the atmosphere grows steadily tenser. Everyone seems to be mentally and emotionally on his toes and one is irresistibly drawn into the prevailing mood.

Finally, all attention is drawn to the big front curtain. If it is the Moscow Art, there is a big white sea-gull which will shortly divide, but in any case the lights will soon go down, the curtain up and the show (one almost said the party) begins.

For the next few hours the stage holds all attention. Three things are bound to be noticed there. First that the play seems to mean a great deal to the audience. Whether it is a contemporary, topical play dramatising the conflicts that these people in the audience have undergone, or a classic—and nowhere are so many foreign and Russian classics performed as in the U S S R—there seems to be a very close connection between actors and audience. They are undergoing a common emotional and intellectual experience.

Naturally, the actors have the most opportunity for showing this, but the audience too, by their rapt attention and fervent applause, show that they do genuinely “assist” at the spectacle.

Secondly, the standard of acting is phenomenally high. Even the smallest parts are played with a finish that indicates months of rehearsal.

Also the cast play together, combining superbly. They have a cohesion that also shows long association. Lastly, the setting, dressing and general mounting of the show shows no expense spared in any direction, although the result is never garish and tasteless. It is merely that what

is required is there, whether it is something simple or, if it is a famous opera, dazzling splendour.

No wonder, therefore, that the audience is enthusiastic and applauds without restraint.

The intervals are interesting also. First because there is so much to see and, secondly, sufficient time to see it in. The foyers are vast. There is invariably a large buffet where all kinds of light refreshment can be bought, and there are tables to sit at if desired. Then there are exhibitions, perhaps of pictures, or on some subject relating to the play. The theatre's past history is recalled by old posters and photographs. Often there are illuminated models of the settings for past productions.

Finally, there is the audience to see once more, as they walk up and down in twos and threes, laughing and joking, or more probably earnestly discussing the play. But the Russians are not a solemn people and if they take their amusements very seriously they also show unmistakably that they are enjoying themselves.

So it happens, and afterwards, if this is one's first visit, there is time to reflect. The first feeling is usually of sheer gratitude and delight for such a long and fascinating evening. But a host of questions follow. How is it all done? Where do the actors come from and what are the conditions under which they work? How are they trained? Even more important, where do the audience come from and how did they get tickets?

Finally, is it like this all over the U.S.S.R., or is this just a very lucky and favourable example? It is to try and answer some of these questions and several others that the following pages have been written.

The Audience

In the preceding short impression, a great stress was laid on the audience, they are, perhaps, the most dis-

distinctive feature of the Soviet Theatre. Their intense interest, their violent, but by no means indiscriminating nor hysterical, applause and, above all, their immense numbers strike any visitor. A dozen or so empty seats indicate that the theatre, or more probably, that particular production, is meeting with marked public disfavour. Usually there are no empty seats and it is necessary to book many weeks ahead if tickets are bought in the ordinary way.

It is not, however, a question of a small and faithful public. This can be disproved, first by the number of theatres and secondly by the length of time productions can be kept in the repertory.

Gorki's famous *Lower Depths*, for instance, received its thousandth performance at the Moscow Art in 1941, having been in the repertory for nearly thirty years.

It was also still possible in 1941 to see Vakhtangov's own production of *Princess Turandot* at the theatre which he founded and which bears his name, although he had been dead for nineteen years.

Doubtless many people saw these productions over and over again, but like the new productions they still draw full houses and it is reasonable to suppose that a very large percentage of the population goes regularly to the theatre, especially as in Moscow alone there are over forty theatres.

What is certain is that they do not come merely for want of anything to do, but because of their intense cultural enthusiasm and genuine love of the theatre. Their appreciation seems to cross the footlights (where these exist) and become part of the performance. How is it they feel this way?

The answer is that the content of a play is nearly always of a nature to make the mass of the people feel that it concerns them. During the Civil War, when the new type of theatre was young and struggling hard; during the Five Year Plan when the country wrestled with problems, the

dimensions of which are only now being realised abroad; and now, when the Soviet state is engaged in a life and death struggle with Fascism, the theatre has always considered its prime duty to be that of dramatising the ordinary worker's problems so as to fit him to deal with them more easily

This does not in the least mean that the plays are always topical, or drab and gum. There is always plenty of laughter, for the Russian has an excellent sense of the comic. There is plenty of colour both in costume and setting—indeed Soviet stage-designs are hard to rival for their sense of dramatic design coupled with a pleasing appearance. Also, as has been said earlier, the classics are extensively performed, and not usually in modern dress. But the theatre, in the deepest sense of the word, belongs to the people, artistically as well as in an economic sense.

This feeling is further strengthened by the fact that every theatre has the closest links with some factory or government department. It is a frequent occurrence for a factory to buy up the entire seating capacity of a house for a single performance. These are known as "closed" performances, and workers from that particular factory are enabled to buy tickets at reduced prices.

In the big theatres factories often rent the seats or boxes for the season and award the tickets to workers who have merited special distinction. Workers' organisations, too, frequently take what we should call "bloc" bookings. Thus by various means not only does the average worker get a seat at a cheaper than normal rate but also, what is far more important, there exists an economic and factual link between the theatres and their worker-audiences.

It need hardly be said that theatres frequently cannot depend solely on their box-office returns both because of the low price of the tickets and because of the scale on which the shows are run. Big State subsidies are paid to

some of the main theatres whose work is considered worthy of it, for the theatre in Russia is considered to be a necessary public service

In these ways the theatre is able to keep in close touch with its audience and to make the audience feel, in turn, that the theatre is theirs. This relationship is even further strengthened by the practice of holding organised discussions with responsible members of the audience, such as elected delegates from a factory that extends patronage to the theatre.

This practice is widely followed throughout the Union so that theatres not only base their judgments on attendances and receptions, but can get, what is far more needed, really representative criticism. In this way the wishes of the people can be known and the theatres never feel cut off from their public. This is one of many reasons for that sense of unity between actors and audience that has been remarked on. Each is conscious of the other's desires and hopes, and both are united in a collective endeavour to assist through their own art in the building of Socialism.

Actors

The high standard of acting is always commented on by foreigners when they first visit the theatres of the U S S R. Not only are there famous leading actors and actresses, as there are in every capital, but the general standard is so high. Even the smallest part is as perfectly acted as a leading one.

The writer recalls seeing in the Moscow Art Theatre's production of Tolstoy's *Resurrection* (a dramatic version of the novel) a whole jury sworn in. Each of these men had just to cross the stage in one scene and take the oath, otherwise they were just part, though a very active part, of a stage "crowd." But in this simple action of crossing and swearing they each created a separate character that

was completely recognisable. It was a perfect example of the care accorded to small parts.

Something, of course, must lie behind this excellence, and the reasons may be grouped under two headings. Training and Conditions of Work

Training: In 1938 there were 44 theatrical schools in the Soviet Union and two theatrical institutes, one at Moscow and one at Kiev. The students totalled 4,000. The two institutes are directly under the People's Commissariat for Education and cover a wider field than the schools, which are usually directly attached to individual theatres. The curriculum and methods of the schools vary considerably with the style of the theatre to which they are attached, for theatres in Russia have a marked individuality and one cannot lightly change from, say, the Moscow Art to the Kamerny (another famous Moscow theatre) without a considerable readjustment of style.

All the schools are supervised, but not necessarily run directly by the People's Commissariat for Education. Whatever variation in methods they follow, a certain minimum standard is laid down.

The courses must include Political Economy, History of the Western Theatre, History of the Russian Theatre, the Russian Language, Russian Literature, Western Literature, Psychology, History of Art, History of the Methodology of the particular theatre to which the school is attached, Voice-Production, Choral Singing, Solo Singing, Make-up, Stagecraft, Gymnastic-cum-Acrobatic dancing, finally, and most important, Mastery of Acting. It is a formidable list and requires time to complete. But it is a thorough one, though one or two items may call for some comment.

The Russian Language, for instance, is obligatory, and necessary when one recalls that a hundred and forty odd languages are spoken in the U S S R. This does not mean

that performers of the national republics cannot act in their own language. On the contrary, although that had been the Tsarist practice, it has been a major part of the Soviet Government's policy to encourage the artistic development of the various nationalities by building on their own traditions and by using their own language. It is, however, necessary to know and be fluent in the one common *lingua franca* of this vast federation of peoples.

The introduction of Political Economy coupled with the attention paid to artistic history shows the desire that the actor should not conceive of his art as divorced from the main course of society. Only by knowing and being able to trace that course will he be able to see his dramatic work in a proper perspective.

Finally, mastery of acting is a phrase that covers the widest possible field. Russia is fortunate in this respect, having recently possessed a great theorist as well as practitioner of the theatre in the person of Constantin Stanislavski, co-founder of the Moscow Art Theatre.

Stanislavski left behind him a carefully worked-out system of teaching acting that has now become the only officially recognised procedure, and all schools and institutes must base their training on his principles, though there is plenty of latitude for departure and variation in their application.

This immense programme needs time to accomplish, and it is not surprising that four years is the usual length of training.

Often the first year is on a part-time basis, the student coming to school from his factory at about 5 p.m. and leaving round about 11 p.m. The second year is invariably full-time, and the student is paid a stipend. It is not great deal but it enables him to live, the theatre always has hostels for its students as well as a canteen in the theatre. Lack of money need deter no young and ardent actor.

Talent is another matter. The student will have to show himself worthy of acceptance in the first instance, then, during the four years the class will be weeded out, though only rarely after the first year has been safely surmounted. By the time the student enters his third year, he can feel pretty safe. He may begin to appear in the theatre's own productions in small speaking parts. The training is long and arduous, but it is the true explanation of the high standard which exists, for by the time the student has finished he is a fully-fledged actor, with real knowledge and experience behind him.

The Institute is a special type of school. Its main aim is to supply theatres to the more remote parts of the country. There is an entrance examination and the successful students take up residence, living collectively in a hostel, similar to the dramatic schools. They are usually between the ages of 17 and 25 and nearly a quarter come from collective farms. The students are drawn from innumerable nationalities (from the tribes in the far north to the Kalnucks of the South) that make up the population of the Soviet Union.

Each institute has about five hundred students and is divided into three sections, one for drama proper, one for music-drama, and one specially devoted to providing theatres for the national minorities.

Not only actors are trained, but also future producers, stage-managers and experts in all other branches of theatre-work, but the unique feature of these institutes is that whole groups, containing enough personnel to make up a complete theatrical company complete with its technicians, are trained as a body so that when they have finished their course they can go out and found a theatre.

Hundreds of miles often separate these students from their homes, and they go equally long distances to start their theatre, often to a place that has never known one

before. The course itself is similar to that in the schools, and the time spent about the same. Taken together, these institutes and schools form one of the most elaborate and complete systems of theatrical training that it is possible to find anywhere. They go far to explain the prevailing high standard.

Conditions of Work

To get a complete picture, however, the conditions of the trained professionals must be investigated. First, some figures

In 1913, the Russian Theatrical Society, to which most actors belonged, had 8,000 actors on its books, of whom an average of 1,000 were always unemployed. By 1934 there were 1,500 stage-managers, 20,000 actors, 3,500 musicians, 400 scenic artists, and 16,500 miscellaneous workers employed in Soviet Theatres. The Bolshoi Opera House in Moscow has a pay-roll of 2,500. All these theatre-workers, irrespective of the nature of their jobs, belong to a common union, which ensures that the theatre as a whole is not divided up into separate groups with possibly antagonistic outlooks.

All this would mean very little if the Soviet actor and technician were not assured of absolute economic stability and permanence of employment. There is, first, the ceaseless expansion of the theatre, with new ones constantly being built, and secondly, the system of permanent companies. An actor is never engaged for a particular production but by the theatre as a whole.

There is, of course, a certain amount of interchange of personnel, but it is the exception rather than the rule, for the Russians believe that the theatre is such a delicate and complex organisation that frequent changes disturb its harmony and ruin its collective approach.

The Soviet actor, therefore, does not normally think in

terms of a single season, but of joining a theatre which offers the prospect of many years, perhaps a lifetime of service. It is only by this method that theatres develop their individual stamp and the actors learn to combine so that they form a highly organised team, possessed of a deep mutual understanding

This satisfactory state of affairs is further assisted by the fact that there are no "runs" in the ordinary sense, but genuine repertory, such as we know in opera or ballet. This minimises the danger of actors becoming bored by constant repetition and thus getting stale. On the contrary, they have the very frequent experience of playing, on successive nights, a brand new production and one ten years old. This ensures a splendid continuity and helps more than anything else to create that sense of tradition that a theatre needs as much as a regiment or any other collective undertaking.

Most theatres also have a very large stock of actors to call on, unless they are in some remote provincial town, although even in such cases the company would be large by British standards. In Moscow or Leningrad, especially where the theatre has a school attached, the total number of actors is large indeed. The Moscow Art Theatre has a company of nearly four hundred.

This does not mean that the great individual actors and actresses are not loved personally, as they are all over the world. In the U.S.S.R. there is very little chance of their personalities being swamped by the necessarily collective organisation. This is demonstrated by the individual honours bestowed on them by the Government, the highest of which is People's Artist of the Republic, and next to that, Honoured Artist of the Republic. These decorations are not awarded lightly and are very proudly displayed so that whenever the name of an artist bearing one is written or announced the Order follows it.

Finally, it must be stressed that theatre artists in the U.S.S.R. are never regarded as a race apart. The scene in *One Day of War*, when a famous singer mounts a tank and sings to a tank detachment just before they move into the battle is typical of the entire relationship.

One of the most famous Moscow actors, I. Moskvina, is a deputy to the Supreme Soviet, though, like the textile workers and miners who are his colleagues there, he does not thereby cease to follow his profession.

Actors, in fact, occupy a very high place in official and general approbation. Their salaries are relatively high, they are looked after when sick, and there are special rest-homes when they require a holiday. Above all, they are assured of security and of occupying a real place in the country's life.

They are, in fact, people's artists, as one of their titles declares practising their art for the people and being richly rewarded for doing so.

The Theatre

1. In Moscow and Leningrad.

It is inevitable that most of the country's finest theatres should be found in its capital. In the U.S.S.R. every separate republic has its capital and it is in these, naturally, that the best theatres are found. But it is in the new and old capitals of Russia—in Moscow and Leningrad—that the most famous theatres exist.

Pride of place must be given to the Moscow Art Theatre, or to give it its full name, the Moscow Academic Art Theatre. Its history goes back to 1898, when Nemirovitch-Danchenko, a successful playwright, joined hands with Alexiev Constantin Stanislavski, the director of an amateur group. Together they founded an art theatre.

There is nothing remarkable in that. It happens annually in most capitals. But this theatre, thanks mainly to its far-seeing and gifted directors, has a very different history from that of the usual "art" theatre.

Already by 1917 it had a long and famous record. Two great dramatists, Chekov and Gorki, had achieved fame through its work, but even more important, its approach to acting and its conception of how a theatre should be conducted had already exercised a decisive influence on the whole European Theatre. Its fame had spread far and wide, and it was becoming a model, having shown by its acting that there were undreamed-of possibilities for playwrights and actors to explore.

There was much speculation as to how this necessarily middle-class art theatre would survive the changes introduced by a Soviet regime. In the first flush of the Revolution there were many who derided it as old-fashioned and bourgeois but the young Soviet Government took a different view.

Lunacharsky, particularly, the Commissar on whose department the supervision of theatres fell, gave Stanislavski's theatre unstinted support, and for the first time made it financially independent. This was a big contrast to Tsarist days when, despite its fame, financial worries were frequent and even Stanislavski himself could never afford to drop outside commitments. With the revolution bankruptcy, to which his theatre had often come perilously close, became a nightmare of the past.

Since then, it has widened and extended its repertoire and outlook without ever breaking its long line of tradition or forsaking the ideals on which it was founded.

Its older members like Moskvin, Kachalov or Olga Knipper-Chekova are the doyen of the Soviet stage, figures of immense veneration, and they have played their

full share in helping to train and develop the younger and post-revolutionary actors

Stanislavski died in 1938, an internationally famous figure. His method of teaching acting, now the standard one in the whole country, is being more and more widely adopted abroad. Nemirovich-Danchenko, however still continues as the theatre's principal director, besides having his own opera theatre.

A visit to the Art Theatre is not easily forgotten. It combines that air of veneration and weighty authority that envelops, say, the Comedie Francaise with the feeling that here is no dry and academic theatre but a living and developing one. It is doubtful indeed if there is any theatre in the world now where it is possible to see acting of a naturalistic kind carried out with such perfection. No detail, however trivial, is neglected. But there is no useless striving after more photographic reality. It is the inner experience that counts in the Moscow Art, that same "truth of feeling" of which its founder spoke so often. Rehearsals for a new and important production sometimes last an unbelievable length of time, there were over 300 rehearsals for the production of a new version of Tolstoy's *Anna Karenina* a few years ago. Many of the old productions are still kept in the repertoire, but there are two or three new productions each year, and it is a high honour indeed for a Soviet playwright to have a play accepted by this theatre.

2. The Vakhtangov Theatre.

This theatre bears the name of its founder, I. Vakhtangov, one of Stanislavski's most gifted pupils. He died tragically early in 1922, aged 38, but his theatre lives on. It has gone through many fluctuations since his death, but latterly it has emerged as one of the most stable organisations in the theatre world.

It accepts the psychological naturalism of the Moscow Art Theatre. It demands also that the theatre shall be, almost in the literary sense, a criticism of life. It demands that each actor should not only have penetrated the mind and feelings of his character but that he himself must resolve his attitude to that character. This must be shown in the playing. Therefore the acting there is sharper and more openly theatrical than the very restrained realism of the Art Theatre.

It is aware, if not too self-consciously, that there is an audience sitting there and uses more open methods of sharing its theatrical experience with it. On the other hand, it has always had a less defined style than the other famous theatres, due to its artistic organisation. Instead of one leading personality like Stanislavski or Tairov, it displays a more collective approach.

There is an Artistic Director, also a Literary Adviser, but it is the Artistic Council that really decides the policy of the theatre. Ten of this Council are old members of the theatre who were associated with the founder, but three are elected by the entire company. The Artistic Director presides over this Council, which decides questions like choice of a play, a producer and so on. When a new play is chosen, however, it is invariably read to the whole company and marked disapproval will cause its ultimate rejection.

It is, perhaps, due to this combined co-operative feeling that, after many growing pains, the theatre has forged ahead. Some of its producers, such as Zakhava, Rappoport or Simonov, are known outside the U S S R. for their valuable contributions to theatrical theory, while inside they are known as amongst the Soviet Union's most gifted artists. In spite of its building having been destroyed by Fascist bombs in the summer of 1941, this theatre continues to be one of the main glories of the Soviet stage.

3. The Theatre of the Red Army.

In recent years a theatre that has come very much to the fore is the Theatre of the Red Army. It was founded in 1929 with a total company of 35, it was a late growth and had a small beginning. By 1939 its company had risen to 100 and the war has accelerated its progress. Originally intended solely for the entertainment and instruction of the Red Army, it used to undertake extensive tours in the spring, summer and autumn to the most remote military districts. Travelling is nothing new in the Soviet Theatre, but this theatre was easily the most widely travelled. Recently, although it has not slackened in this respect, it has built its own Moscow theatre and rapidly made it one of the most popular in the capital.

Under the direction of Popov, its productions have become famous. Naturally, in its repertoire it has tended towards "military" plays, but like all other Soviet theatres it has not neglected the classics. One of its most successful productions of recent years was Shakespeare's *Taming of the Shrew*, and it has produced other Shakespearean plays. This may seem surprising for a theatre intended primarily for soldiers, until it is remembered that the Red Army has always been regarded as a great cultural force as well as a powerful military weapon. Consequently, even when visiting remote garrisons classics have been performed. There is no room in the U S S R for any lower estimate of a Red Army man than of any other citizen, this is just one way of seeing that this is so.

4. State Jewish Theatre

Another theatre of more than passing interest is the State Jewish Theatre, which although it should perhaps be more correctly classed under theatres of national minorities, has achieved such a standing in

Moscow as to be worthy of mention. It was founded in January, 1919, one of the first visible signs that the Jewish people were no longer to suffer from racial hatred but, in common with all other races in the Union, were to live freely and develop their own culture.

At first it was restricted mainly to classical Jewish plays by Jewish authors, but later new plays began to appear. Jewish heroes of the past figured in many of these but some plays were contemporary in setting and often contained an element of sharp criticism. Its acting tended to the grotesque. Although it had its own enthusiastic public, it was distasteful to some people and it was not till 1935 that a really superb production put it on the cultural map. This was Radlov's production of *King Lear* with the lead played by the now famous actor, S. Mikhoels.

Gordon Craig was one of the many foreign visitors who reacted with great enthusiasm. He declared that Mikhoels' performance was, by a long way, the finest *Lear* he had ever seen. This was the theatre's turning point, and under the direction of Mikhoels it has broadened its scope considerably. It holds now a very proud position in the affections of its own people, always in any country assiduous theatre-goers. A recent census, however, showed that over a third of its audience was non-Jewish.

5. Kamerny Theatre

There are a great many more theatres both in Moscow and Leningrad that deserve mention, some rank as high, if not higher, than these four.

There is the Maly, the home of classic Russian acting until the Moscow Art usurped its place, but which still continues to maintain a prominent position. Then pages should and could be written of the Bolshoi, one of the world's most splendid opera houses, where International

opera and ballet is mounted on the most lavish scale. But the theatres described here have been chosen because each in its way represents a different type.

Therefore, some words must be devoted to the Kamerny Theatre, the nearest Soviet equivalent to what is in other countries termed an "art" theatre. It was founded in 1914 by Tairov, its sole director until fairly recent times. At first a small intimate theatre, its outlook in those days is well expressed by the fact that its outstanding production was Oscar Wilde's *Salome*.

Tairov, after the revolution, tried to concern himself more with content than with form, though he did not find it easy. One might have expected the new government to allow his rather precious, though undoubtedly gifted group, to drop by the wayside. Instead, they were given the usual unstinted support and became one of Moscow's leading theatres. Tairov performed one great service in that in his theatre one could see more foreign plays than anywhere else in Moscow. Eugene O'Neill received special attention and *The Hairy Ape*, *Desire under the Elms* and *All God's Chillun Got Wings*, were all produced at the Kamerny. Shaw, G. K. Chesterton and Dos Passos have also been introduced to Russian audiences by the Kamerny and in general this theatre has been a link with the Western world.

On the other hand, its outlook has never really corresponded to what the new audience demanded, and, finally, Tairov, though continuing to work there, was deprived of much of his autocratic control.

But he has certainly given many lovely and exciting productions to the Moscow public, though taking considerable liberties with scripts. There was, for instance, a production about Anthony and Cleopatra where the works of Pushkin, Shakespeare and Shaw were all blended into a single play.

The one great success that the theatre had was its first successful production of a Soviet play, Vishnegyski's *Optimistic Tragedy*. It is perhaps characteristic that on the eve of the Nazi attack it was producing a version of *Madame Bovary*.

Experimental Theatres

So far nothing has been said here about the experimental theatres. At one time Moscow theatres were thought of abroad as places where actors swarmed up ropes and ladders and acted all round the audience. Most of these ideas were associated with the theatre of Meyerhold, an extraordinarily gifted producer who was given years of unremitting support until it was noticed that except for a handful of rather detached intellectuals the Moscow populace were not much interested in his very formalistic productions.

Less is known abroad of the work of Meyerhold's pupil Okhlopkov. In the early 'thirties he ran his own experimental theatre, the Realistic, and is now acting and producing with the Vakhtangov.

In the Realistic Theatre, actors and audiences were blended together so that one did not sit and watch a play, it went on all round. Okhlopkov used to choose plays of a topical character, as a rule, plays like *Mother*, *Aristocrats*, or the *Iron Flood* which dealt with the life of the ordinary Russian people.

In these productions the stage (or more properly, acting space) was centred in the midst of the audience, so that the spectator was irresistibly drawn into the play and felt himself to be taking part in it.

This was very different from Meyerhold, who, even at the height of his success, was always intent on portraying types rather than individuals. It was only Meyerhold's individual brilliance, his extraordinary sense of plastic rhythm, and his amazing ingenuity that kept him to the

fore so long His earlier productions were fiercely social in content, extravagantly polemical, whereas towards the end, when he turned to French nineteenth century classics like *La Dame aux Camelias*, there was only the formal beauty left, the inner vitality had vanished.

Okhlopkov was always more human, intensely human, in his approach, and for that reason his will be a name that will live in the history of the Soviet Theatre These experimental theatres were not only tolerated but were treated in the most generous fashion Their mistakes may have been costly but were more than compensated for by their achievements; their mistakes, as well as their achievements, have done much to build the strong foundations on which the Soviet theatre stands.

There are very few types of theatre, and very few technical devices, that have not been tried out in the U.S.S.R.

The only theatre which has never been countenanced, is one run for purely commercial ends.

In this brief sketch of typical Moscow theatres, there are, as has been already said, considerable and serious gaps There is the Gypsy Theatre, with its exceptional vitality, the Theatre of the Revolution, and the opera houses. Beside the Bolshoi, there is Nemirovich-Danchenko's opera house, where more experimental types of opera, treated in a more realistic fashion, are played

It is the same in Leningrad, where, since the revolution, almost all modern European operas of note have been performed

The writer recalls, when, seeing a modern Soviet opera based on the famous novel *And Quiet Flows the Don*, some illuminated sets of past productions in the foyer One of these showed a large spring suspended over the stage, with dark red and black wings

On enquiry, this was found to be a setting for Alban Berg's *Wozzeck*, which, about that time, had created a

newspaper sensation by a concert performance in London, and this production had taken place years before! It was not the sort of thing that one expected to see performed in the Soviet Union, but so amazingly catholic and embracing is Soviet cultural taste that very few works of any merit do not get, not only a production, but a good and proper production

For there is no drab uniformity in the Soviet Theatre. Every theatre has its own individual style to such an extent that each needs to be described separately. Certainly in the capitals there is the most amazing theatrical vitality and an enviable variety combined with unpaired artistry.

Provincial and Republican

It would be a great mistake to suppose that theatres of merit and artistic interest are confined to Moscow and Leningrad. In 1913 there were only 153 theatres in the whole of the Russian Empire, but by 1941 the number had grown to 823. Nowhere has the growth been greater than in the non-Russian Soviet republics.

Republics such as the Armenian, Tajik, Turkmen or Kirghiz, which had no theatres at all before the revolution, had by 1938, 24, 21, 9 and 15 respectively. The Ukrainian Republic, which formerly had 35, possessed 100 in 1938, the same story can be told of each republic.

Do these theatres just perform Moscow successes or have they any independent contribution to make?

It can confidently be stated that the standard of their repertone is just as high as that of the capital. This can be proved by a survey taken in 1938 of 53 provincial theatres.

There were found to be 92 productions of Ostrovski's plays, 50 of Gorki's, 34 of Shakespeare's (including 13 of *Othello*), 17 of Lope de Vega's and 15 of Schiller's. What

an amazing proof of the respect felt for the great classics, no matter of what country, especially when one recalls that each of these are separate productions and not touring companies

The provincial theatres do not, however, only produce classics. They have a rich independent drama of their own

A good example, chosen because of its remoteness, is the Buryat-Mongolian theatre. This was first founded in Ulan-Ude, the capital, in 1932. This republic, situated on the borders of China and Mongolia, has for its inhabitants people who have barely emerged from the nomadic stage. Any idea of such a thing as a theatre, except some very primitive erection, would have been inconceivable only a few years ago. Yet among their very first productions are plays of Goldoni and Moliere as well as Russian classics

Othello was an early production as well as Lope de Vega's fine peasant play, *Fuente Ovejuna*. The Buryat-Mongolian theatre quickly developed a native form of music-drama into which they could interweave their own national folk tunes and stories

Finally, a few years after their first production, they journeyed hundreds of miles to Moscow to perform at the Bolshoi Theatre. All the time it must be remembered they are performing in their own language, a language which in Tsarist days would have been discouraged even for ordinary use

It would be a mistake, however, to imagine that these national minorities express their individual cultures only by performing in their own language. It goes much deeper than that. Their own national past, formerly inaccessible and proscribed, becomes alive again on the stage.

There are countless plays in Georgia and Armenia about Georgian and Armenian heroes of the past—and these two

republics are instanced only because they have such a long and rich history. Enormous attention has been paid to national folklore and legend so that every Soviet citizen can become aware of his own immediate national past as well as the immediate problems confronting the Union as a whole.

Even when plays dealing with these problems are taken from Moscow, they are very often altered to suit local conditions. Vsevolod Ivanov's *Armoured Train*, a famous production of the Moscow Art Theatre, was altered when produced in Georgia. Its action took place in Dagestan rather than in Siberia and Causcasian mountaineers took the place of Siberian peasants. There were even national songs and dances in the production which must have been very different from its Moscow original.

This was a Rustavelli Theatre production, a theatre outstanding among the republican theatres for its distinctive style and exacting innovations. This theatre amongst whose famous productions, plays of Georgian writers like Shalva Dadiani's *Tetnuld*, have disputed in popularity with classics like Schiller's *Die Rauber*, renamed *In Tryannos*, has always built its style and strength on native traditions.

As its famous director, Sandra Akhemetelli, wrote when a young law student in 1915 about the Tsarist pseudo-Georgian theatre:

"The Georgian theatre is not Georgian, because its scenic means, its plastics, its accent, its intonation, its style do not follow organically from our nature. This theatre has not attempted to make a study of the body movements of Georgian people and to understand and reveal the rhythm of these movements."

It was by this intense interest in his own people and a subsequent development of their native gifts and inheritance that the Rustavelli director was able to bring his theatre such fame. It must, however, be reasserted that

this theatre is taken only as an outstanding example of the general development of the theatres of the national minorities. They have, throughout, continued to follow Stalin's slogan of developing their culture, "nationalist in form and socialist in content."

Children's Theatres

No survey, however short, of the Soviet theatre would be complete without some mention of the Children's Theatres. These are theatres for children, not by children. On the contrary, they have a large company of highly trained adults, consisting not only of actors, technicians and so forth, but experts to study the reactions of the audience and to mingle with the children in the intervals.

A visit to one of these theatres is one of the most moving experiences a visitor to the U.S.S.R. can have.

They are usually smallish, as the authorities feel that over-large theatres are unsuitable for children, but one will see six or seven hundred children seated without any adults at all.

The play, music and all that goes on in front of them has been chosen specially to suit the age-group to which they belong. Frequent questionnaires are circulated amongst the audience and regular discussions are held so that after years of experience there is a very exact knowledge of what children like at any particular age.

In the intervals there are the usual capacious foyers in which to wander round, sweets to buy, suitable picture exhibitions to look at and, more than that, trained personnel of the really good nursery school or kindergarten type who will collect knots of children round them to tell stories, or play tunes they have just heard on the stage and to which they can now dance.

The whole scene is one of such indescribable happiness that one wonders if there is any country where so much regard is had for the needs of children. The plays are delightful to watch and performed with just the same technical brilliance that one sees in the adult theatre.

The writer recalls an experienced English producer refusing, while the performance was still in progress, to believe that the parts of the boys were being played by women, so astonishing is their technique. The first of these theatres was opened on November 7th, 1918, and already by 1938 there were 131 similar ones in the country.

Some of the plays, like *The Negro and the Monkey*, have attained fame abroad, and many children's classics find their way to the stage, such as *Huckleberry Finn* and *Robin Hood*. These theatres are regarded not only as splendid entertainment, but as amongst the most vital educative forces in the life of a Soviet child, and as many children as possible are given the chance of going regularly to the theatre.

Finally, the existence of such theatres makes it possible to forbid children under a certain age to go to the adult theatres, since they have their own, thereby relieving the adult theatres of the necessity to toning down their whole performance so as to be on the level of a child.

Amateur Theatres

The true test of a country's love of the theatre is always to be found in the strength of its amateur theatre, which is highly developed in the Soviet Union. There is scarcely a factory, or recreational club, without its amateur dramatic group. In 1914 there were only 222 clubs in Russia, existing almost exclusively for the nobility, the merchants and the Tsarist officers. To-day, there are some 95,600 clubs and about 60,000 have amateur circles devoted either to musical or dramatic

activities. This movement is by no means confined to the towns, for 56,000 of these clubs are in the countryside, and frequently perform plays in the collective farms where. according to figures taken for 700 districts, there were no less than 21,672 dramatic circles

These amateur groups are usually supplied with excellently equipped stages by their trade unions, in the same way as the orchestras are supplied with their instruments. In this way stage plays are not only witnessed by vast numbers of people, but participated in, for, unless this were so, there could never be the enthusiasm and the big attendance at the professional theatres

An enormous amount of professional help is given to the amateur theatre. Indeed, there is scarcely one theatre of note in Moscow or elsewhere that is not linked to a number of amateur groups by the active work of its leading members. No matter how eminent, leading actors and producers attend amateur groups regularly. For example, Moskvina coaches at the Stalin Automobile Works, Khanayev, People's Artist of Merit of the R F S F R, coaches a large circle organised by the Financing and Banking Employees' Union, and innumerable other examples could be given. In this way the closest co-operation is maintained between the professional and amateur theatre, and there is no hard and fast line between them.

Naturally, the professional theatre benefits in the way of regular audiences who feel a link with the theatre, and also these amateur groups constantly produce new professional actors who rise to fame

For instance, Chirkov, who played Maxim Gorki in the film, "My Universities," came from a small amateur dramatic circle in the town of Nalmsk, and Neleppe, the famous Leningrad opera star, was discovered in an amateur chorus organised at a topography school

It is not very likely that outstanding talent in the amateur theatre could remain long unnoticed when there is so much opportunity for professionals to come into contact with it. Finally, this professional help never costs the amateur circle anything, it being regarded as part of the professional's work to take an active interest in some amateur group.

These amateur groups produce not only the well-known Soviet plays and classics, including Shakespeare, but often produce new plays that are later taken up by the professional theatres. Very often amateur groups interchange and perform at each other's circles, also at the local houses of culture, and clubs which professional companies also visit. This is especially true on the collective farms, where the great distances make it all the more necessary to send amateur groups round to many farms. These groups were a potent force during the Five-Year Plan and helped considerably by their plays to bring home to the masses of people the issues that were facing them. There is, in short, every sign of creative vitality in the Soviet amateur theatre.

Plays

Much has already been said about plays in this sketch, if only incidentally, as it is impossible to talk about theatres and omit plays, but more can be conveniently added.

In the early days after the revolution, plays of the right type were few and far between. New dramatists had not appeared, and most of those who did, wrote stuff that was too crude for the more exacting taste of the leading theatres. The Moscow Art Theatre had particular difficulty in this respect. Soon, however, names began to appear of dramatists who possessed real talent. Playwrights like Afinogenov or Kataev showed that the great tradition of Chekov and Gorki could be continued.

Gorki, in any case, was still alive and set a shining example with plays like *Enemies* and the unfinished trilogy, of which *Yegor Bulichov* was the first part.

Armoured Train was the first successful play of the new type undertaken by the Art Theatre, a play that showed Socialism in the making. Others soon followed. There was *Intervention*, Afinogenov's daring *Fear*, *The Optimistic Tragedy* and so forth. These nearly all dealt with the Civil War, a fruitful theme for many years to come.

In the beginning, when the struggle had hardly died down, people's passions were still too inflamed to watch a quiet, realistic picture, so that the early plays were often exceedingly melodramatic in character. Later, however, what became known as "socialist realism" definitely took its place as the dominating conception. This is not easy to paraphrase shortly, but it infers a view of society that is realistic, yet betrays its sociological structure. It demands that all plays, whether classics or modern, shall be seen in the light of the society in which and for which they are written. It demands, primarily, that the dramatist shall be true to life, but not only to its superficial and external aspect.

There have been many plays and dramatists of this type. Pogodin with his famous *Aristocrats* and *Kremlin Chimes*, two outstanding names have been developed since the war—Simonov and Korneichuk.

The Soviet theatre has always paid enormous attention to classics, perhaps more than any other theatre. Amongst the most frequently performed are Shakespeare's *Hamlet* and *Othello*, Lope de Vega's *Fuente Ovejuna* (Sheep Spring) and Schiller's *Love and Intrigue*, but there are countless others.

Moliere, Goldoni and many other Shakespeares, especially the comedies, like *Twelfth Night* and *The Taming of*

the Shrew are frequently performed. Naturally, also, a Soviet audience loves its own Russian classics, especially the work of Gorki, Ostrovski and Gogol. First-class stage adaptations have been made of the world's great novels, like *Madame Bovary*, nearly all Tolstoy (including *War and Peace*), even *Pickwick Papers* and Balzac's *Human Comedy* have been dramatised with success.

Foreign writers as a whole receive great attention, if they are of any merit. O'Neill and Shaw figure prominently on the bills, and one is always coming across other plays by well-known authors, such as Priestley's *Dangerous Corner*, until there seems to be hardly anything interesting that gets missed.

When the Germans invaded in 1941, in Moscow alone Shakespeare, Sheridan, Moliere, Benavente and Flaubert were represented—a really magnificent testimony to the wide and deep culture of the Soviet Theatre.

Soviet Theatre in War-time

The sudden onset of war and its subsequent fierce and unrelenting character did not find the theatre any less able than other departments of Soviet life to meet the new situation.

First, as the situation grew grimmer, the more eminent Moscow and Leningrad theatres evacuated bodily. The Moscow Art went to Saratov, the Vakhtangov to Omsk, the Leningrad Opera House to Tashkent and so forth. Also, as many will recall here, when in the dark days of October, 1941, it was decided to move all but the vital government offices together with the diplomatic corps to Kuibishev, room was found for the beloved Moscow ballet.

These moves may seem strange but, apart from the justification that having evacuated vital industries to the Urals and so giving the theatres a clear task to follow

their audiences, there was another reason. As one Soviet journal recently expressed it,

‘The Nazis in their arrogant way declared that in the East cultural values deserve no consideration. The Soviet Union has removed these treasures and the Hitlerites will never lay hands on them’

That is how the famous theatres of the Soviet Union are seen, as ‘cultural treasures,’ comparable to old masters which it is essential to preserve

Moskvin wrote

“The Moscow Academic Art Theatre in coming to Saratov sets itself the aim—despite the complicated conditions created by the great patriotic war against the Fascist invaders—fully to preserve and develop its art, which belongs to the Soviet people”

It is interesting to see what the war-time repertoire of the Moscow Art Theatre has been since it moved. When war broke, it had just produced *The School for Scandal*, and among the plays scheduled were *Kremlin Chimes* by Pogodin, a play of the early struggles in 1920 and one about Pushkin by Bulgakov.

On reaching Saratov, though naturally under considerable difficulties with a theatre seating only 500 (though still with their own beloved front-curtain with its sea-gull) they not only carried out most of their plans but enlarged them.

An audience, presumably less sophisticated than that of Moscow and composed almost entirely of industrial war-workers and Red Army men, packed the theatre at each performance, and showed not only liking for the new productions, but wanted to see the old ones as well. Some of the most famous productions in the theatre’s history were revived (though many had never fallen out of repertoire), even A. K. Tolstoy’s *Tsar Fyodor Ivanovich* with which they first made their name in the last century.

That winter of 1941 in Saratov, one could see *The School for Scandal*, *Anna Karenina*, *The Three Sisters*,

and *The Lower Depths* besides those already mentioned. By January, 1942, *Kremlin Chimes* was produced, then the Pushkin play, and there were projected revivals of *The Pickwick Club* and Ostrovsky's *Ardent Heart*. At present, the famous French writer Jean Richard Bloch is writing a new play for them. The mere catalogue leaves one almost breathless, but what an astonishing tribute it is to the depth and vitality of the Soviet theatre.

Other evacuated theatres have similar stories but it must not be thought that theatrical life died in Moscow. On the contrary, with the improved situation last year, many new and exciting productions were seen, one of which has already been produced in New York and which English audiences may soon have the privilege of seeing.

This is *The Russians*, by Simonov, a play which received the unique distinction of being first published in *Pravda* in four instalments. It is a passionate and tense study of life in an occupied town not far from the front-line and shows people as they really behave under the conditions of modern total war. It stresses, very naturally, the heroism of the Red Army and its closeness to the people, but does not shrink from portraying a would-be, if petty, quisling. Especially it shows the Soviet citizen's passionate attachment to his home and his detestation of those who would despoil them. The fact that the hero is a local man, and the commander of the Red Army detachment, serves to emphasise that link between the army and the people. The part played by the heroine, Valya, pays tribute to the part played by the Soviet women. This play shows "socialist realism" at its best, not in the sense of false heroics, but as a living picture of bitter reality.

At the moment, however, another play is running of even greater popularity. Alexander Korneichuk's *The Front*, which is being played simultaneously in three packed theatres, is a play about the war as its title

suggests, but it takes a critical attitude. An old commander, out-of-date, always boasting about his part in the Civil War, is supplanted by a younger and more mentally alert man. This criticism of the Red Army's equivalent to Blimp received not only a tremendous reception but very full official backing. Constructive criticism has never been lacking in the U.S.S.R., despite some opinions to the contrary.

There have been other good war plays too, such as Solovyov's *A Citizen of Leningrad*, which dramatises Shostakovich writing his famous Seventh Symphony in besieged Leningrad.

There have been sad losses. Afinogenov was killed in an air-raid when fire-watching, leaving behind him a play called *On the Eve* which depicted impact of war on a village, and showed what the policy of "scorched earth" meant.

Valentin Kataev, author of *Squaring the Circle* and that lovely children's book *Lone White Sail*, has also been killed. But the theatre goes on.

Naturally, most of the new plays deal with the war, since the Soviet theatre always concerns itself with what its people are most concerned with at the moment. But there is an even greater demand for classics, as we saw in Saratov, for a people who really loves and appreciates its culture, when the whole basis of that culture is threatened inevitably turns once again to its treasures. All this would, however, be a very incomplete account of the Soviet Theatre in war-time if it left out the most important part of its work.

This is the touring companies which perform literally in the front line. Those who have seen *One Day at War*, or other Soviet newsreels may have been impressed with the way really distinguished artistes came and performed to Red Army men or to airmen right where the fight was

going on, either before moving into battle or at a forward landing-ground.

From the day war opened, no theatre company was disbanded. Instead it went to play to the Red Army. This was, in a way, no new experience for Soviet actors even in peace-time, as the theatres in the big towns had been closed during the summer months and had toured all over the country, visiting the remotest places. Also the services had always had their own theatres.

The Red Army Theatre has been mentioned, but the Baltic Fleet, for instance, founded a theatre in 1931 and has given over 2,470 performances. Its actors are members of the fleet and this is considered as virtually their sole occupation, not by any means always a soft one, as can be estimated from the fact that during the Soviet-Finnish War, though there were only 105 days of fighting the theatre gave over 300 performances in trenches, on lorries and often under fire in the region of Lake Ladoga. Now this continues on a far wider scale.

No matter how distinguished the artist, and no matter how improvised the stage, a performance is given. There is plenty of laughter—even a circus performs in this way—but plenty of extracts from more serious works. Tolstoy, Chekov, and Shakespeare are very often heard within sound of gun-fire. Many incidents are reported to show the conditions, such as the breaking off of one performance to a group of fighter-pilots while "the audience dealt with the enemy" and its resumption when they had finished. So whether it is caustic and satirical laughter at the enemy's expense or tales of stirring heroism, the Soviet Theatre has shown itself able in war, as in peace, to serve its people, without ever falling below the exacting requirements of true art.